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EOSDIS Core System Project

ECS Project Training Material
Volume 7: Resource Planning

December 1997

Hughes Information Technology Systems
Upper Marlboro, Maryland

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Volume 7: Resource Planning

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Preface

This document is a contract deliverable with an approval code of 3. As such, it does not require formal Government approval. This document is delivered for information only, but is subject to approval as meeting contractual requirements.

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Abstract

This is Volume 7 of a series of lessons containing the training material for Version 2.0 Drop 2 of the Earth Observing System Data and Information System (EOSDIS) Core System (ECS). This lesson provides a detailed description of the process required for integrating resource requests into a resource plan for a site, scheduling resources on a daily, weekly and monthly basis and reviewing the process for implementing plans.

***Keywords**:* training, instructional design, course objective, planning, resource planning.

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Introduction

Identification

Training Material Volume 7 is part of Contract Data Requirements List (CDRL) Item 129, whose requirements are specified in Data Item Description (DID) 625/OP3 and is a required deliverable under the Earth Observing System Data and Information System (EOSDIS) Core System (ECS), Contract (NAS5-6000).

Scope

Training Material Volume 7 describes the procedures by which ECS personnel prepare resource reservation requests and resource planners prepare resource plans. This lesson is designed to provide the operations staff with sufficient knowledge and information to satisfy all lesson objectives.

Purpose

The purpose of this Student Guide is to provide a detailed course of instruction that forms the basis for understanding resource planning. Lesson objectives are developed and will be used to guide the flow of instruction for this lesson. The lesson objectives will serve as the basis for verifying that all lesson topics are contained within this Student Guide and slide presentation material.

Status and Schedule

This lesson module provides detailed information about training for Version 2.0 Drop 2. Subsequent revisions will be submitted as needed.

Organization

This document is organized as follows:

Introduction:	The Introduction presents the document identification, scope, purpose, and organization.
Related Documentation:	Related Documentation identifies parent, applicable and information documents associated with this document.
Student Guide:	The Student Guide identifies the core elements of this lesson. All Lesson Objectives and associated topics is included.
Slide Presentation:	Slide Presentation is reserved for all slides used by the instructor during the presentation of this lesson.

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Related Documentation

Parent Document

The parent document is the document from which this ECS Training Material's scope and content are derived.

423-41-01	Goddard Space Flight Center, EOSDIS Core System (ECS) Statement of Work

Applicable Documents

The following documents are referenced within this ECS Training Material, or are directly applicable, or contain policies or other directive matters that are binding upon the content of this document:

420-05-03	Goddard Space Flight Center, Earth Observing System (EOS) Performance Assurance Requirements for the EOSDIS Core System (ECS)
423-41-02	Goddard Space Flight Center, Functional and Performance Requirements Specification for the Earth Observing System Data and Information System (EOSDIS) Core System (ECS)

Information Documents

Information Documents Referenced

The following documents are referenced herein and amplify or clarify the information presented in this document. These documents are not binding on the content of the ECS Training Material.

535-TIP-CPT-001	Goddard Space Flight Center, Mission Operations and Data Systems Directorate (MO&DSD) Technical Information Program Networks Technical Training Facility, Contractor-Provided Training Specification
609-CD-003-001	Operations Tools Manual
611-CD-004-001	Mission Operation Procedures for the ECS Project

Information Documents Not Referenced

The following documents, although not referenced herein and/or not directly applicable, do amplify or clarify the information presented in this document. These documents are not binding on the content of the ECS Training Material.

220-TP-001-001	Operations Scenarios - ECS Release B.0 Impacts

305-CD-020-002	Release B SDPS/CSMS System Design Specification Overview for the ECS Project
305-CD-021-002	Release B SDPS Client Subsystem Design Specification for the ECS Project
305-CD-022-002	Release B SDPS Interoperability Subsystem Design Specification for the ECS Project
305-CD-023-002	Release B SDPS Data Management Subsystem Design Specification for the ECS Project
305-CD-024-002	Release B SDPS Data Server Subsystem Design Specification for the ECS Project
305-CD-025-002	Release B SDPS Ingest Subsystem Design Specification [for the ECS Project]
305-CD-026-002	Release B SDPS Planning Subsystem Design Specification for the ECS Project
305-CD-027-002	Release B SDPS Data Processing Subsystem Design Specification for the ECS Project
305-CD-028-002	Release B CSMS Communications Subsystem Design Specification for the ECS Project
305-CD-029-002	Release B CSMS System Management Subsystem Design Specification for the ECS Project
305-CD-030-002	Release B GSFC DAAC Design Specification for the ECS Project
305-CD-031-002	Release B Langley DAAC Design Specification for the ECS Project
305-CD-033-002	Release B EDC DAAC Design Specification for the ECS Project
305-CD-034-002	Release B ASF DAAC Design Specification for the ECS Project
305-CD-035-002	Release B NSIDC DAAC Design Specification for the ECS Project
305-CD-036-002	Release B JPL PO.DAAC Design Specification for the ECS Project
305-CD-037-002	Release B ORNL DAAC Design Specification for the ECS Project
305-CD-038-002	Release B System Monitoring and Coordination Center Design Specification for the ECS Project
305-CD-039-002	Release B Data Dictionary Subsystem Design Specification for the ECS Project
601-CD-001-004	Maintenance and Operations Management Plan for the ECS Project
604-CD-001-004	Operations Concept for the ECS Project: Part 1-- ECS Overview

604-CD-002-003	Operations Concept for the ECS Project: Part 2B -- ECS Release B
605-CD-002-001	Release B SDPS/CSMS Operations Scenarios for the ECS Project
607-CD-001-002	ECS Maintenance and Operations Position Descriptions
500-1002	Goddard Space Flight Center, Network and Mission Operations Support (NMOS) Certification Program, 1/90

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Resource Planning Overview

Lesson Overview

This lesson will provide you with the complete process by which ECS personnel prepare resource reservation requests and resource planners prepare resource plans. The processes described in the lesson apply to resource planners and other maintenance and operations personnel who manage system hardware resources. The procedures involved in resource planning include such tasks as preparing, validating, approving, and committing resource reservation requests, reviewing resource timelines, generating resource planning reports, and defining resources.

Lesson Objectives

Overall Objective - The overall objective of the Resource Planning lesson is for Maintenance and Operations (M&O) personnel to develop proficiency in the procedures that apply to resource planning operations for the Earth Observing System (EOS) Data and Information System (EOSDIS) Core System (ECS).

Condition - The student will be given oral or written information and requirements for performing resource planning activities, access to the Planning Subsystem, a copy of 609-CD-003-001, *Operations Tools Manual*, and a copy of 611-CD-004-001, *Mission Operation Procedures for the ECS Project*.

Standard - The student will perform resource planning activities in accordance with the prescribed procedures without error.

Specific Objective 1 - The student will describe the general steps in the resource planning process from the preparation of a resource reservation request to the publication of a resource plan.

Condition - The student will be given written or oral questions concerning the general steps in the resource planning process.

Standard - The student will state without error the general steps involved in the resource planning process in accordance with the applicable procedure.

Specific Objective 2 - The student will perform the steps involved in launching resource planning applications.

Condition - The student will be given a statement of the requirements for launching resource planning applications, access to the Planning Subsystem (through a workstation or X terminal), a copy of 609-CD-003-001, *Operations Tools Manual*, and a copy of 611-CD-004-001, *Mission Operation Procedures for the ECS Project*.

Standard - The student will perform without error the steps involved in launching resource planning applications in accordance with the applicable procedure.

Specific Objective 3 - The student will perform the steps involved in preparing a resource reservation request.

Condition - The student will be given a statement of the requirements for preparing a resource reservation request, access to the Planning Subsystem (through a workstation or X terminal), a copy of 609-CD-003-001, *Operations Tools Manual*, and a copy of 611-CD-004-001, *Mission Operation Procedures for the ECS Project*.

Standard - The student will perform without error the steps involved in preparing a resource reservation request in accordance with the applicable procedure.

Specific Objective 4 - The student will perform the steps involved in editing/modifying a resource reservation request.

Condition - The student will be given a statement of the requirements for editing/modifying a resource reservation request, access to the Planning Subsystem (through a workstation or X terminal), a copy of 609-CD-003-001, *Operations Tools Manual*, and a copy of 611-CD-004-001, *Mission Operation Procedures for the ECS Project.*

Standard - The student will perform without error the steps involved in editing/modifying a resource reservation request in accordance with the applicable procedure.

Specific Objective 5 - The student will perform the steps involved in validating or rejecting a resource reservation request.

Condition - The student will be given a statement of the requirements for validating or rejecting a resource reservation request, access to the Planning Subsystem (through a workstation or X terminal), a copy of 609-CD-003-001, *Operations Tools Manual*, and a copy of 611-CD-004-001, *Mission Operation Procedures for the ECS Project.*

Standard - The student will perform without error the steps involved in validating or rejecting a resource reservation request in accordance with the applicable procedure.

Specific Objective 6 - The student will perform the steps involved in approving resource reservation requests.

Condition - The student will be given a statement of the requirements for approving resource reservation requests, access to the Planning Subsystem (through a workstation or X terminal), a copy of 609-CD-003-001, *Operations Tools Manual*, and a copy of 611-CD-004-001, *Mission Operation Procedures for the ECS Project*.

Standard - The student will perform without error the steps involved in approving resource reservation requests in accordance with the applicable procedure.

Specific Objective 7 - The student will perform the steps involved in committing a resource reservation request.

Condition - The student will be given a statement of the requirements for committing a resource reservation request, access to the Planning Subsystem (through a workstation or X terminal), a copy of 609-CD-003-001, *Operations Tools Manual*, and a copy of 611-CD-004-001, *Mission Operation Procedures for the ECS Project*.

Standard - The student will perform without error the steps involved in committing a resource reservation request in accordance with the applicable procedure.

Specific Objective 8 - The student will perform the steps involved in deleting resource reservation requests.

Condition - The student will be given a statement of the requirements for deleting resource reservation requests, access to the Planning Subsystem (through a workstation or X terminal), a copy of 609-CD-003-001, *Operations Tools Manual*, and a copy of 611-CD-004-001, *Mission Operation Procedures for the ECS Project*.

Standard - The student will perform without error the steps involved in deleting resource reservation requests in accordance with the applicable procedure.

Specific Objective 9 - The student will perform the steps involved in reviewing a resource timeline.

Condition - The student will be given a statement of the requirements for reviewing a resource timeline, access to the Planning Subsystem (through a workstation or X terminal), a copy of 609-CD-003-001, *Operations Tools Manual*, and a copy of 611-CD-004-001, *Mission Operation Procedures for the ECS Project*.

Standard - The student will perform without error the steps involved in reviewing a resource timeline in accordance with the applicable procedure.

Specific Objective 10 - The student will perform the steps involved in generating resource planning reports.

Condition - The student will be given a statement of the requirements for generating resource planning reports, access to the Planning Subsystem (through a workstation or X terminal), a copy of 609-CD-003-001, *Operations Tools Manual*, and a copy of 611-CD-004-001, *Mission Operation Procedures for the ECS Project*.

Standard - The student will perform without error the steps involved in generating resource planning reports in accordance with the applicable procedure.

Specific Objective 11 - The student will perform the steps involved in adding resources to the resource planning list.

Condition - The student will be given a statement of the requirements for adding resources to the resource planning list, access to the Planning Subsystem (through a workstation or X terminal), a copy of 609-CD-003-001, *Operations Tools Manual*, and a copy of 611-CD-004-001, *Mission Operation Procedures for the ECS Project*.

Standard - The student will perform without error the steps involved in adding resources to the resource planning list in accordance with the applicable procedure.

Specific Objective 12 - The student will perform the steps involved in modifying resources on the resource planning list.

Condition - The student will be given a statement of the requirements for modifying resources on the resource planning list, access to the Planning Subsystem (through a workstation or X terminal), a copy of 609-CD-003-001, *Operations Tools Manual*, and a copy of 611-CD-004-001, *Mission Operation Procedures for the ECS Project.*

Standard - The student will perform without error the steps involved in modifying resources on the resource planning list in accordance with the applicable procedure.

Specific Objective 13 - The student will perform the steps involved in deleting resources from the resource planning list.

Condition - The student will be given a statement of the requirements for deleting resources from the resource planning list, access to the Planning Subsystem (through a workstation or X terminal), a copy of 609-CD-003-001, *Operations Tools Manual*, and a copy of 611-CD-004-001, *Mission Operation Procedures for the ECS Project.*

Standard - The student will perform without error the steps involved in deleting resources from the resource planning list in accordance with the applicable procedure.

Specific Objective 14 - The student will perform the steps involved in synchronizing resource listings.

Condition - The student will be given a statement of the requirements for synchronizing resource listings, access to the Planning Subsystem (through a workstation or X terminal), a copy of 609-CD-003-001, *Operations Tools Manual*, and a copy of 611-CD-004-001, *Mission Operation Procedures for the ECS Project.*

Standard - The student will perform without error the steps involved in synchronizing resource listings in accordance with the applicable procedure.

Importance

This lesson applies to students who will be resource planners or who will manage system hardware resources. The lesson will provide them with the knowledge and skills needed when performing their assigned tasks. Those tasks include (among other things) preparing, validating, approving, and committing resource reservation requests, reviewing resource timelines, generating resource planning reports, and defining resources. The lesson describes why and how the activities are performed. Consequently, the students will become aware of what tasks they will be performing on the job and how to accomplish those tasks.

Resource Planning Concepts

The Resource Planning Process

One of the principles of operation underlying resource planning is that resources are routinely allocated to specific system services. For example, the processors that are used for production processing are normally dedicated to that purpose on a long term basis. Likewise, the processors that are used for science software integration and test (SSI&T) are normally dedicated to SSI&T on a long term basis. It is on an exception basis that they are allocated to other activities.

The resource planning process is the mechanism by which reservations for non-routine "ground events" are defined and controlled. Ground events include the following types of activities (among others):

- testing.
- training.
- simulations.
- preventive maintenance.
- system upgrades.
- any other non-routine event that requires Distributed Active Archive Center (DAAC) production resources.

Resource planning affects the resources that are scheduled during the production planning process; consequently, resource planning and production planning are interdependent. In general, both resource planning and production planning involve planning for the next day, week and month. Resource Planning activities occur on a biweekly basis for 30-day plans, on a weekly basis for 10-day plans, and on a daily basis. However, requests to support ground events may be entered at any time.

Resource plan reports may be filed in subdirectories of the $ECS_HOME/*mode*/CUSTOM/docins and $ECS_HOME/*mode*/CUSTOM/docserver directories on a Document Data Server (DDSRV) host machine. Eventually (when the actual Document Data Server has been delivered and document ingest functions have been implemented) the Document Data Server will publish all resource planning documents.

Personnel who have a need for planning and data processing subsystem resources use Resource Planning tools when submitting their requests for resource time to accomplish the non-routine activities that they plan to undertake. The site Resource Planner uses the Resource Planning applications when processing resource reservation requests for non-routine events and when preparing resource plans/schedules. In addition, the Resource Planner uses the Resource Definition tool (also known as the Resource Editor) for adding resources to or modifying the

characteristics of resources on the list of resources in the Planning and Data Processing Subsystems (PDPS) database.

The Resource Planner defines ECS resources used in production planning and processing in the following terms:

- “AutoSys” (production processing software).
- “computers” (virtual computers composed of CPU-disk combinations).
- “real computers.”
- “disks.”
- generic “hardware.”
- “strings” (sets of computers and storage devices).

The Resource Planning Subsystem is initialized with the resource data from the Baseline Manager database. Resources may be added to or deleted from the resource planning list in the PDPS database without affecting the Baseline Manager database. Consequently, the Resource Planner is able to specify resources that are not currently usable but will become available in the future. Furthermore, the Resource Planner can reset resource planning to the baseline at any time. (This is an important feature because the baseline actually changes over time.)

The Resource Planner reviews requests for resource reservations to determine if the requests are valid. Requests include the following types of information:

- activity description.
- resource requirements.
- time period for using the requested resource(s).
- comments (e.g., explanation of variance from normal use).

The Resource Planner may decide to forward the request to a "subject-matter expert," whose expertise is particularly relevant to the request, in order to validate the request. Such subject-matter experts are considered "sponsors."

Should the sponsor agree that the request to reserve the resource is valid, the Resource Planner approves it along with all other requests that have been validated, and drafts a proposed Resource Plan. The scheduling software identifies conflicts (if any) in the draft Resource Plan and alerts the Resource Planner to the problem(s). If possible, the Resource Planner resolves all conflicts before taking the proposed plan to the review board for approval. If the review board confirms that the reserved resources will not have adverse effects on the DAAC’s high-priority events, it approves the plan. When the plan has been approved by the review board, the Resource Planner "commits" the plan, which signals the Planning Subsystem to “publish” the plan, putting it into effect.

Launching Resource Planning Applications

Launching Resource Planning Applications

As previously mentioned the following two (2) software applications are the principal tools associated with Resource Planning:

- Resource Planning tool (Resource Planning System Scheduling Interface).
- Resource Definition tool (Resource Editor).

Other applications associated with resource planning include the following items:

- Message Handler (which displays various types of messages).
- System Name Server (which handles interprocess communication).
- Resource Planning System Resource Model (which is an underlying resource data coordinator for the resource planning software).
- Resource Planning Timeline (which provides a graphic display of resource allocations).
- Report Generator (which allows Planning and Production personnel to select/generate various planning and production reports)

All ECS personnel who may need to use system resources should be granted access to the Resource Planning tool for the purpose of submitting resource reservation requests. Personnel who may be appointed "sponsors" for the purpose of validating resource reservation requests should have authorization to validate those requests. Other functions of Resource Planning and the Resource Definition features should be reserved for the Resource Planner.

It is expected that eventually the ECS desktop will be configured to allow access to the resource planning applications using the icons shown in Figures 1 and 2. In the interim, access to the applications must be gained through the use of UNIX commands.

In any case, launching resource planning applications starts with the assumption that the applicable servers are running and the operator (resource manager or Resource Planner) has logged in to the ECS system.

Launching Resource Planning Applications Using UNIX Commands

1 Access the command shell.

- The command shell prompt is displayed.

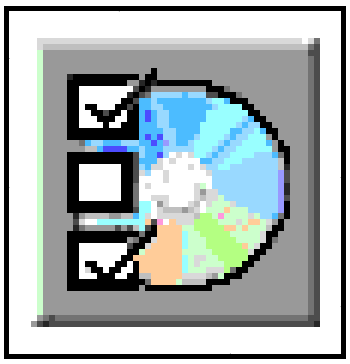

Figure 1. Resource Planning Tool Icon

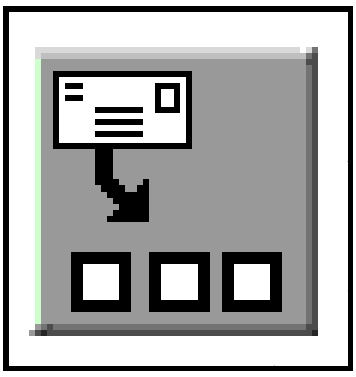

Figure 2. Resource Definition Tool Icon

NOTE: Commands in Steps 2 through 13 are typed at a UNIX system prompt.

2 Type **xhost +** then press the **Return/Enter** key on the keyboard.

3 Open another UNIX window.

4 Start the log-in to the planning server by typing either **telnet *servername*** (e.g., **b0-pln-g1**), **rlogin *servername***, or **rsh *servername*** in the second window then press the **Return/Enter** key.

- If you use the **telnet** command, a **Login:** prompt appears; continue with Step 5.

- If you use either the **rlogin** or **rsh** command, the system uses the User ID currently in use; go to Step 6.

5 If a **Login:** prompt appears, log in as yourself by typing your ***UserID*** then pressing the **Return/Enter** key.

6 At the **Password:** prompt type your ***Password*** then press the **Return/Enter** key.

7 Start the log-in to DCE by typing **dce_login** then pressing the **Return/Enter** key.

8 At the **Enter Principal Name:** prompt type your ***DCE UserID*** then press the **Return/Enter** key.

9 At the **Enter Password:** prompt type your ***DCE Password*** then press the **Return/Enter** key.

10 Type **setenv DISPLAY *clientname*:0.0** then press the **Return/Enter** key.

- Use either the terminal/workstation IP address or the machine-name for the ***clientname***.

11 Type **source /usr/ecs/*mode*/.buildrc** then press **Return/Enter**.

- The ***mode*** will most likely be one of the following operating modes:
  - OPS (for normal operation).
  - TS1 (for testing).
  - SHARED (for other uses).
- Note that the separate subdirectories under /usr/ecs apply to (describe) different operating modes.
- The **source** command sets the environment variables as specified in **.buildrc**.

12 Type **cd /*path*** then press **Return/Enter**.

- Change directory to the directory (e.g., /usr/ecs/*mode*/CUSTOM/bin/PLS) containing the resource planning command files (e.g., EcPlRpStartAll).

13 Type **EcPlRpStartAll *ApplicationID mode*** then press **Return/Enter** to launch the Message Handler, System Name Server, and the Resource Model.

- The **Message Handler** graphical user interface (GUI) (Figure 3) is displayed.
- The **Message Handler** displays various types of messages. The **Message Handler** GUI displays messages of the following types:
  - Engineering.
  - Information.
  - Warning.

— Internal.

- The **System Name Server** (SNS) handles interprocess communication.
- The **Resource Model** is an underlying resource data coordinator for the resource planning software.
- The ApplicationID is a number from 1 to 5. Only one person at a time is permitted to run the application using a particular ApplicationID. Another person who wishes to run the application at the same time must use another ApplicationID (if available). Consequently, there is a maximum limit of five (5) instances of the application running concurrently.
- The ***mode*** will most likely be one of the following operating modes:
  - — OPS (for normal operation).
  - — TS1 (for testing).
  - — SHARED (for other uses).

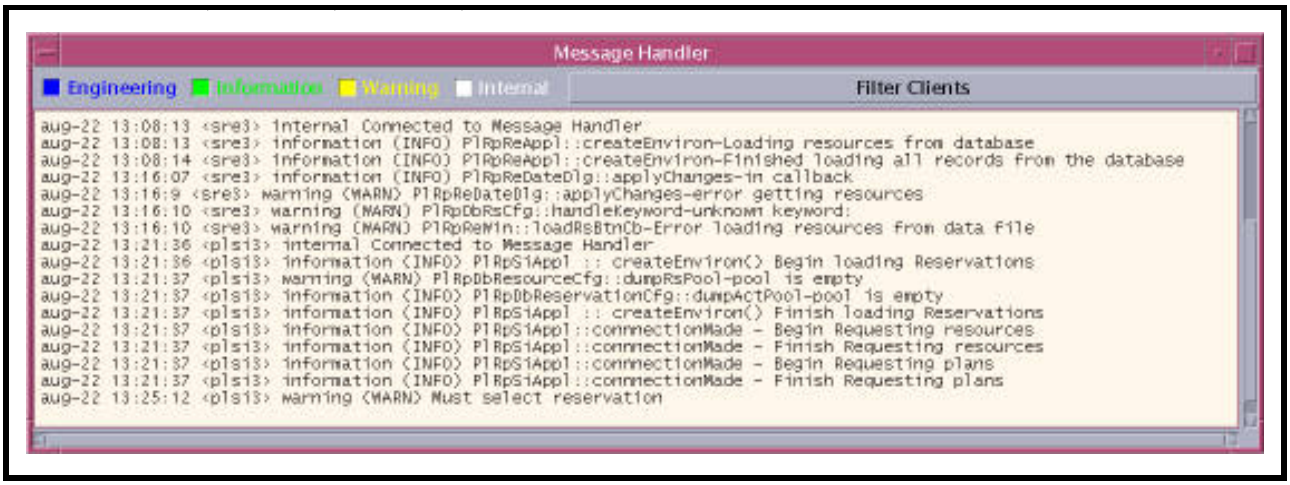

Figure 3. Message Handler GUI

14 Type **EcPlRpStartRe** ***ApplicationID mode*** then press **Return/Enter** to launch the Resource Definition tool (Resource Editor).

- The **Resource Definition** GUI (Figure 4) is displayed.
- The **Resource Definition** GUI provides the following data on each resource (as indicated by the column headers for the resource list):
  - — Resource Name.

— Type [of resource].

— Activity.

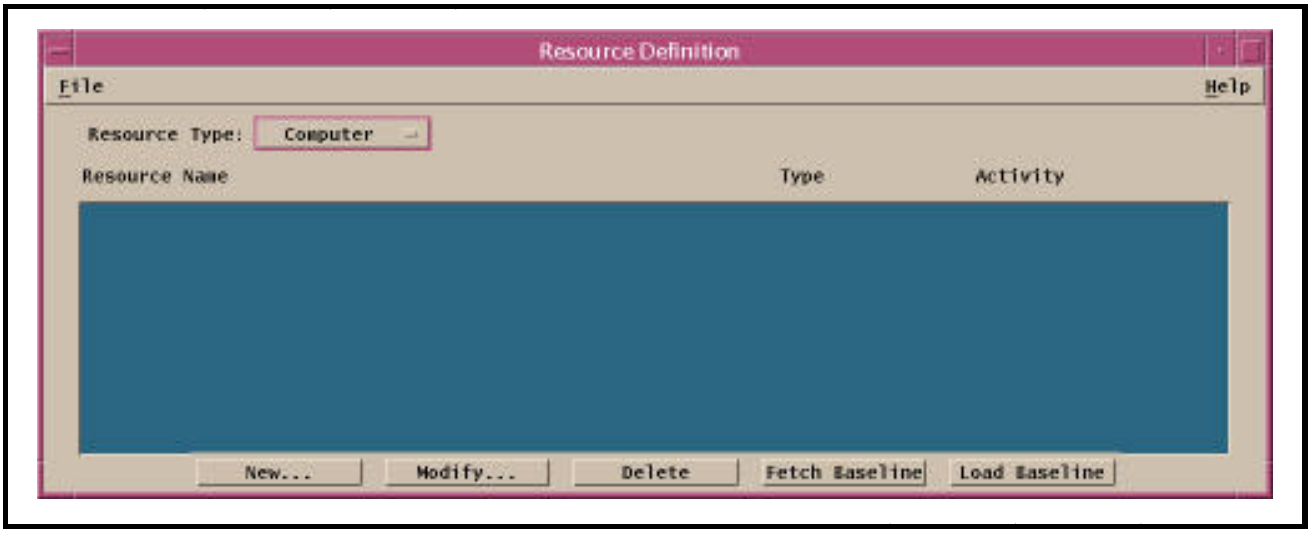

Figure 4. Resource Definition GUI

15 Type **EcPlRpStartSi** ***ApplicationID mode*** then press **Return/Enter** to launch the Resource Planning tool GUI.

- The **Resource Planning** GUI (Figure 5) is displayed.
- The **Resource Planning** GUI shows the **Resource Reservation List**, which provides the following data on each resource reservation request (as indicated by the column headers for the list):
  - — Reservation Name.
  - — Status [of each reservation].
  - — Activity Type.
  - — Frequency.
  - — Start Date [and time].
  - — Stop Date [and time].

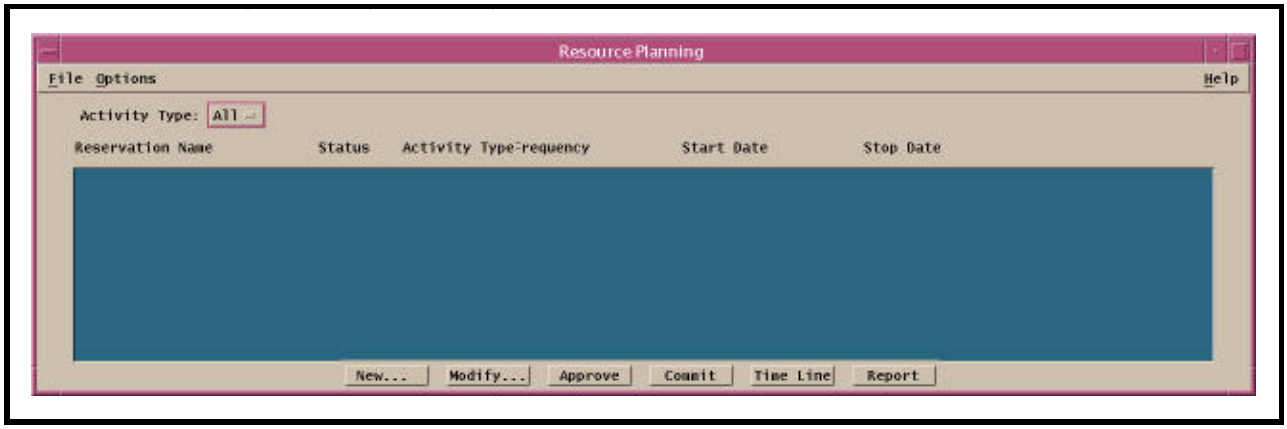

Figure 5. Resource Planning GUI

- In addition, a set of buttons enables the following operations:
  - **New...** - Create a resource reservation request (brings up the **Resource Reservation Request Edit/Definition** GUI described in the next section).
  - **Modify...** - Edit or review the details of an existing resource reservation request.
  - **Approve** - Used to indicate that the resource reservation request(s) has (have) been validated and a draft resource plan can be created. Clicking on this button causes the Planning Subsystem to determine whether there are conflicts between this resource reservation and other reservations. The Planning Subsystem detects conflicts and reports them to the operator.
  - **Commit** - Commit all approved resource reservations. (Commit to a plan.)
  - **Timeline** - Display a timeline-oriented view of the resource plan in the Resource Reservation Plan Timeline GUI.
  - **Report** - Display the Report Generator GUI for selecting reports and report options.
- Access to the various functions depends upon each operator's authorization to use them.

Creating a Resource Reservation Request

Creating a Resource Reservation Request

The person who needs to use resources creates a resource reservation request that includes the following information:

- activity for which the reservation request is being made.
- resources to be dedicated to the activity.
- when/how often the activity will occur.

When the requester has submitted a resource reservation request, it is reviewed by the Resource Planner and may be evaluated by a "sponsor" who either validates (determines that the specified resources are appropriate for the proposed activity) or rejects the request.

The procedure for creating a resource reservation request starts with the assumption that the person who will be generating the request has logged in to the ECS system and the proper desktop environment is being displayed.

Creating a Resource Reservation Request

1 Launch the **Resource Planning** tool (if it has not been launched already).

- The **Resource Planning** GUI (Figure 5**)** is displayed.

2 From the **Resource Planning** GUI, click on the **New...** button to gain access to the **Resource Reservation Request Edit/Definition** GUI.

- The **Resource Reservation Request Edit/Definition** GUI (Figure 6**)** is displayed.

3 Type a name for the resource request in the **Request Name** field (**Resource Reservation Request Edit/Definition** GUI).

- **Request Name** is a mandatory entry.
- The Resource Planning Subsystem automatically fills in the **Edited Date (**date of request entry) field (you do not have to make an entry in the field).

4 Type the User ID of the authorized user preparing the resource request in the **Originator** field.

- **Originator** is a mandatory entry.

5 If the type of activity currently displayed on the **Activity** option button is not accurate, click and hold on the **Activity** option button and select (highlight then release the mouse button) the proper activity from the option menu that is displayed.

- The following activities are currently available:
  - — **Production.**
  - — **Test.**

6 Slide the **Priority** slide to the right to select the appropriate priority for the resource reservation request.

- The **Priority** scale is numbered from 0 to 100.
- The higher the number selected, the lower the priority.
  - — 1 denotes the highest priority.
  - — 100 designates the lowest priority.

7 Type a description of the specific activity for which the resource is required in the **Description** field.

- For example, if **Test** was selected as the **Activity**, "Version 2.0 Acceptance Test B024" might be entered in the **Description** field to describe the particular test to be performed using the requested resources.

8 Perform the procedure for **Selecting Resources** (subsequent section of this lesson).

9 Type duration information in the following fields (to define the period over which the resource is required), pressing the **Tab** key on the keyboard after completing each entry to move to the next field:

- **Start Day** - start date of the resource request period (in ***MM/DD/YYYY*** format - mandatory entry).
- **Start Time** - start time of the resource request period (in ***hh:mm:ss*** format - mandatory entry).
- **Stop Day** - stop date of the resource request period (in ***MM/DD/YYYY*** format - mandatory entry).
- **Stop Time** - stop time of the resource request period (in ***hh:mm:ss*** format - mandatory entry).
  - — If a reservation is to be repeated at intervals (with some frequency), the **Stop Day** specifies the end date in the date range of the reservation request.

10 Perform the procedure for **Selecting Frequency** (subsequent section of this lesson).

- The **frequency** selection involves identifying those periods of time when the requested resources are needed for the specified activity.

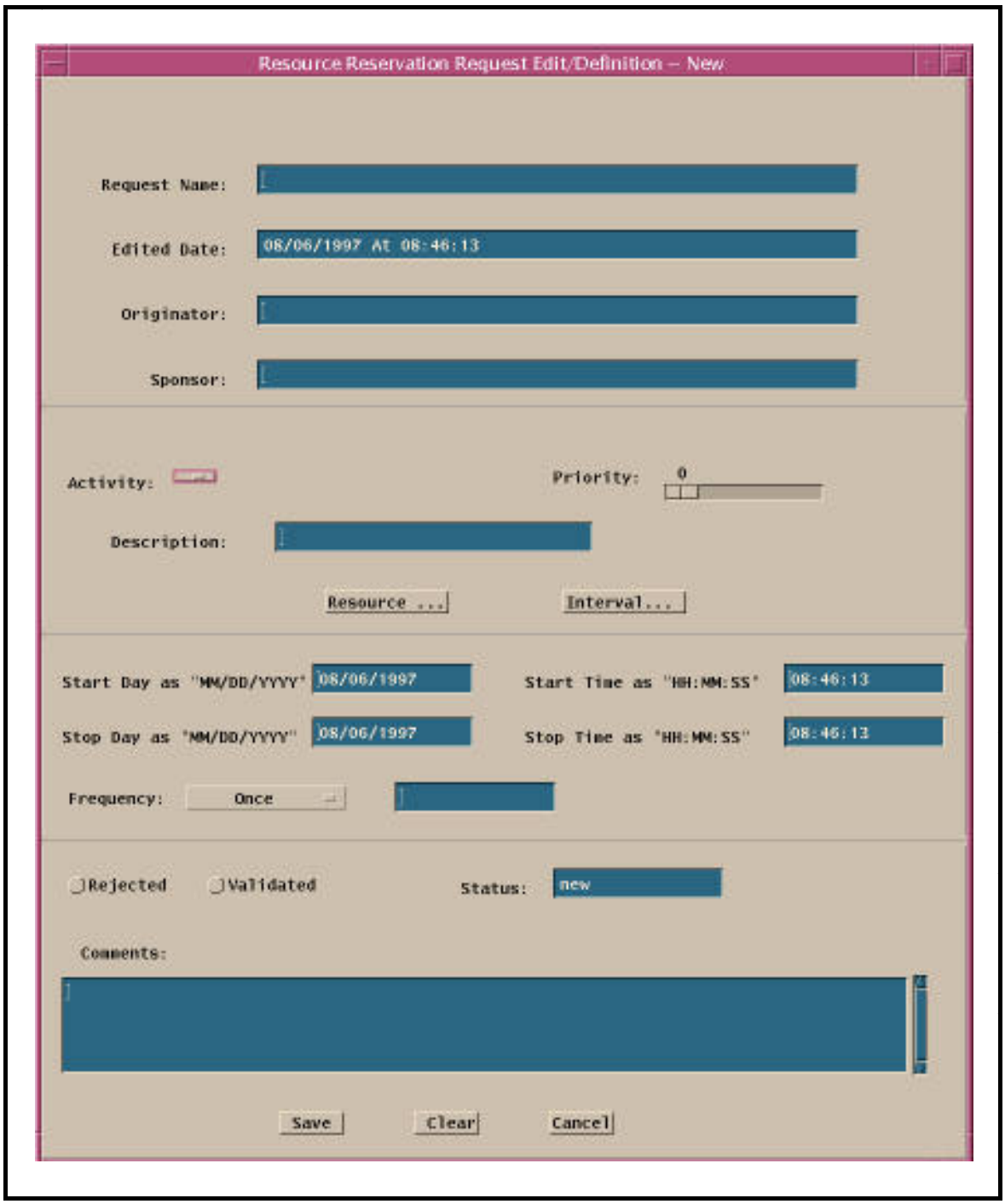

Figure 6. Resource Reservation Request Edit/Definition GUI

11 If applicable, perform the procedure for **Deselecting Interval** (subsequent section of this lesson).

- The **interval** selection involves identifying those periods of time (if any) when the requested resources are **not** needed during the period(s) of time defined by the duration and frequency specified on the resource reservation request.

12 Type comments concerning the resource reservation request in the **Comments** field.

- Leave the selections **Validated** and **Rejected** for the sponsor's evaluation (to be discussed in a subsequent section of this lesson).
- The **Status** field indicates **new** when a new resource reservation request is being prepared.

13 After the appropriate data have been entered in the resource reservation request fields, click on the appropriate button(s):

- **Save** - to save the resource reservation request.
- **Clear** - to clear entries. Once cleared, the entries are deleted from the system.
- **Cancel** - to exit the **Resource Reservation Request Edit/Definition** GUI without saving the request.

There is a quick-step version of the preceding procedure. Avoid using quick-step procedures until you have become very familiar with the detailed versions of procedures.

Selecting Resources

The **Resource…** button on the **Resource Reservation Request Edit/Definition** GUI provides the person submitting the request with a means of specifying the resources to be assigned to the particular resource reservation request. Upon clicking on the **Resource…** button a **Resources Selection** GUI with the following pair of lists is displayed:

- **Resources** - identifies the available resources.
- **Selected Resources** - identifies the resources that have been selected for incorporation in the resource reservation request.

The person submitting the request selects resources by moving resources from one list to the other until the **Selected Resources** list contains the desired set of resources. The requester highlights each resource to be moved and clicks on the appropriate arrow button to make the transfer.

The procedure for selecting resources starts with the assumption that the person submitting the request has launched the **Resource Planning** tool and the **Resource Reservation Request Edit/Definition** GUI (Figure 6) is currently being displayed.

1 Click on the **Resource…** button to gain access to the **Resources Selection** GUI.

- The **Resources Selection** GUI (Figure 7) is displayed.
- The **Request Name** is displayed.
- The **Resources Selection** GUI shows a pair of lists.
  - **Resources** - itemizes the available resources.
  - **Selected Resources** - itemizes the resources that have been selected for incorporation into the resource reservation.

2 Move resources (as necessary) between the **Resources** and **Selected Resources** lists on the **Resources Selection** GUI by selecting (highlighting) the resource to be moved (click on the resource in the list from which it is to be moved) then clicking on the right or left arrow button (as applicable) to move the resource to the other list.

- Highlighted resource disappears from one list and appears on the other.

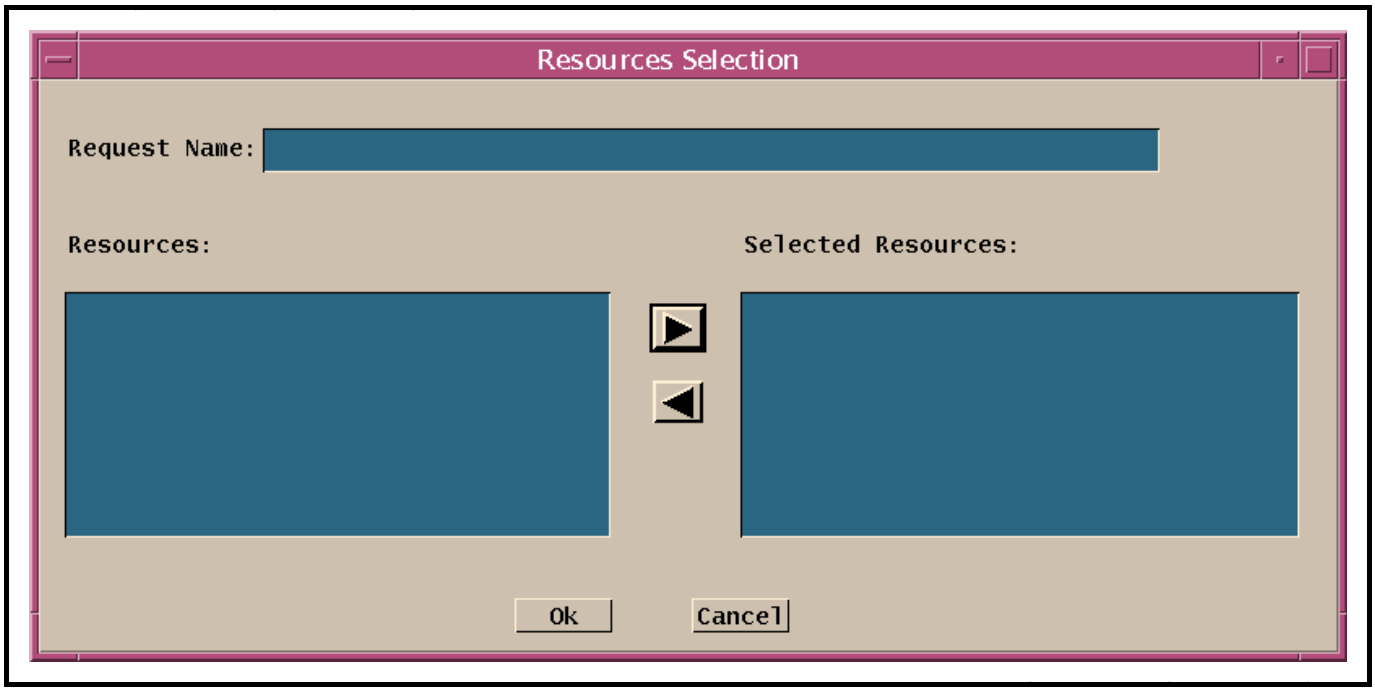

Figure 7. Resources Selection GUI

3 When the appropriate data have been entered in the resource fields, click on the appropriate button from the following selections:

- **OK** - to save the selections, exit the **Resources Selection** GUI and return to the **Resource Reservation Request Edit/Definition** GUI.
- **Cancel** - to exit the **Resources Selection** GUI and return to the **Resource Reservation Request Edit/Definition** GUI without saving the selected resources.

4 Return to the procedure for **Creating a Resource Reservation Request** and go to the next step in the process of defining the resource reservation request.

Selecting Frequency

The **Frequency** option button on the **Resource Reservation Request Edit/Definition** GUI (Figure 6) allows the user to specify whether the resource reservation request describes a one-time event or a recurring event. Furthermore, the **Frequency** button provides options for periodic resource requests; i.e., to specify how often a repeating resource need will occur. Several options for specifying the frequency are available in the **Frequency** option menu and there is a text field in which the person making the request enters a qualifier for certain frequencies. The default frequency is **Once**, which indicates that the resource need covers the entire time period between the 'Start Time' and 'Stop Time' (if the request is for one day only, a single Start Date is required for the **Once** option only). Other options are identified in Table 1, Frequency List and Qualifiers. The frequency data are applied to the resources specified in the **Selected Resources** list box (described in the preceding section).

The procedure for selecting resources starts with the assumption that the person submitting the resource reservation request has launched the **Resource Planning** tool and the **Resource Reservation Request Edit/Definition** GUI (Figure 6) is currently being displayed.

Selecting Frequency

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1 Click and hold on the **Frequency** option button on the **Reservation Request Edit/Definition** GUI and select (from the option menu that is displayed) the appropriate frequency to be applied to the resource reservation request.

- The frequency options on the menu are shown in Table 1, Frequency List and Qualifiers.

2 If **Repeat_Every** was selected as the frequency, type the frequency in the format ***n Days*** (where ***n*** equals the number of days between actions) in the field to the right of the **Frequency** button.

3 Return to the procedure for **Creating a Resource Reservation Request** and go to the next step in the process of defining the resource reservation request.

Table 1. Frequency List and Qualifiers

Frequency	Text Qualifier	Result
Once	--	The default. Resource reservation covering the period between the start time and stop time for the start/stop date specified.
Daily	--	Resource reservation for every day, between the start date and end date, for the start time and end time specified.
Weekly		Resource reservation for every week on the start day of the week between the start time and end time specified, repeated every week until the specified end date.
Every_2_Weeks		Resource reservation for every two weeks on the start day of the week between the start time and end time specified, repeated every two weeks until the specified end date.
Monthly	--	Resource reservation for every month on the start day of the month, repeated until the end date as specified.
Mon_thru_Fri	--	Resource reservation for every Monday through Friday, between the start date and end date, for the start time and end time specified.
Mon_Wed_Fri	--	Resource reservation for every Monday, Wednesday, and Friday, between the start date and end date, for the start time and end time specified.
Tue_Thurs	--	Resource reservation for every Tuesday and Thursday, between the start date and end date, for the start time and end time specified.
Repeat_Every	n-days	Resource reservation for every n-days, between the start date and end date, for the start time and end time specified.
Weekend	--	Resource reservation for every Saturday and Sunday, between the start date and end date, for the start time and end time specified.

Deselecting Interval

The **Interval…** button on the **Resource Reservation Request Edit/Definition** GUI (Figure 6) allows the person submitting the resource reservation request to tailor a **frequency-based** request by overriding selected intervals. When the requester clicks on the **Interval…** button, a **Resource Reservation Intervals Selection** GUI with the following pair of lists is displayed:

- **Selected Intervals** –initially identifies the dates applicable to the resource reservation request as automatically generated by the Resource Planning Subsystem, based upon the **Frequency** option selected (as described in the preceding section on **Selecting Frequency**).

- **Unselected Intervals** - the person making the resource reservation request lists the date(s), if any, from among the automatically selected intervals to identify when the requested resources will **not** be needed for the activity for which the resource reservation request is being prepared.

The **Selected Intervals** are generated automatically by the system; however, the person submitting the resource reservation request can modify them manually by moving dates from one list to the other until the **Selected Intervals** list contains the desired set of dates. The person submitting the resource reservation request highlights each date to be moved and clicks on the appropriate arrow button to make the transfer.

The procedure for deselecting intervals starts with the assumption that the person submitting the resource reservation request has launched the **Resource Planning** tool and the **Resource Reservation Request Edit/Definition** GUI (Figure 6) is currently being displayed.

Deselecting Intervals

1 Click on the **Interval…** button on the **Resource Reservation Request Edit/Definition** GUI to gain access to the **Intervals Selection** GUI.

- The **Intervals Selection** GUI (Figure 8) is displayed.
- The **Request Name** is displayed.
- The **Intervals Selection** GUI shows the following pair of lists:
  - **Unselected Intervals** - lists dates (if any) that do **not** need to be reserved for the resource reservation request.
  - **Selected Intervals** - identifies the applicable dates for the resource reservation request (initially automatically generated by the system based upon the **Frequency** option selected).

2 Move dates (as necessary) between the **Unselected Intervals** and **Selected Intervals** lists on the **Intervals Selection** GUI by selecting (highlighting) the date to be moved (click on the date in the list from which it is to be moved) then clicking on the right or left arrow button (as applicable) to move the date to the other list.

- Highlighted date disappears from one list and appears on the other.

3 When the appropriate data have been entered in the interval fields, click on the appropriate button from the following selections:

- **OK** - to save the selections, exit the **Intervals Selection** GUI and return to the **Resource Reservation Request Edit/Definition** GUI.
- **Cancel** - to exit the **Intervals Selection** GUI and return to the **Resource Reservation Request Edit/Definition** GUI without saving the selections.

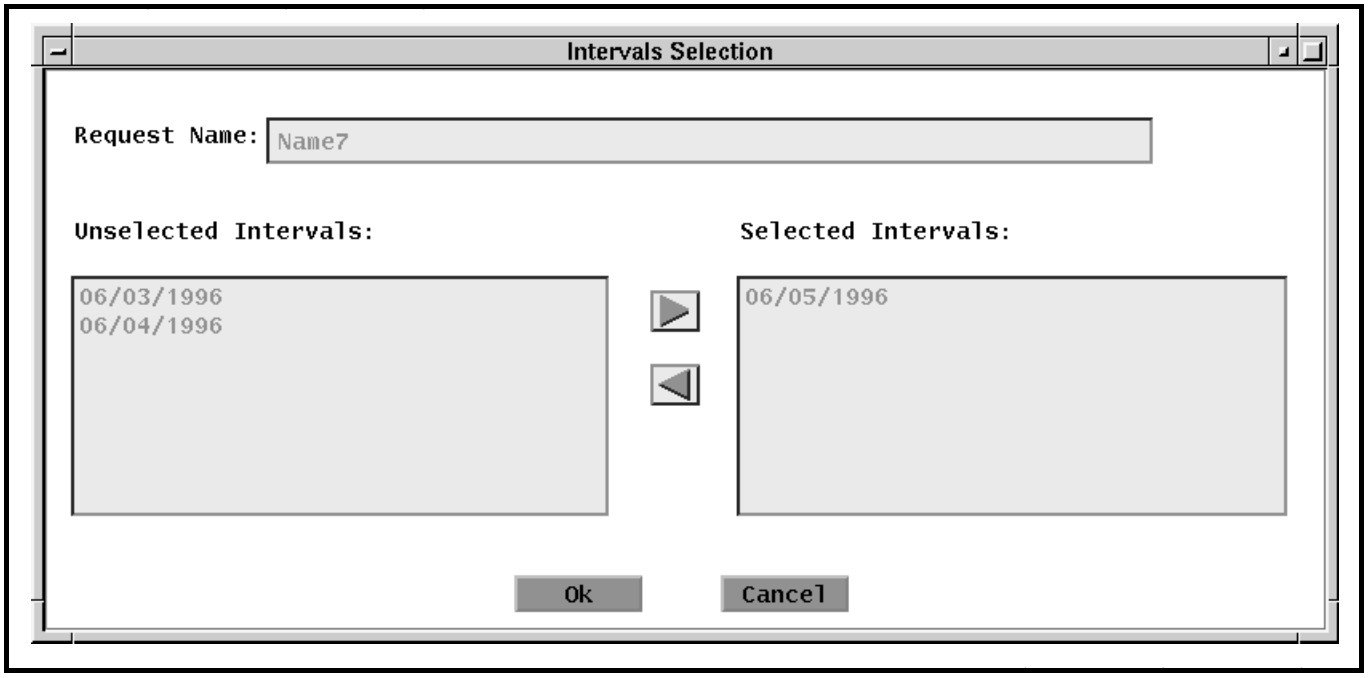

Figure 8. Resource Reservation Intervals Selection GUI

4 Return to the procedure for **Creating a Resource Reservation Request** and go to the next step in the process of defining the resource reservation request.

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Editing a Resource Reservation Request

Editing a Resource Reservation Request

During the process of evaluating resource reservation requests to validate and approve them and achieve a conflict-free resource plan, it may be necessary to edit some of the resource reservation requests. For example, any of the following factors may change, requiring modification of a resource reservation request:

- characteristics of the activity/event for which a resource reservation request was prepared.
- resources available.
- appropriateness of specified resources for the proposed activity.
- resource conflicts.

Before editing a resource reservation request the person editing the request must have available the same types of information that were required for making the initial request (including the appropriate changes to be made). In addition, the person editing the request must know which request is to be edited.

The procedure for editing a resource reservation request starts with the assumption that the person editing the request has logged in to the ECS system and the proper desktop environment is being displayed.

Editing a Resource Reservation Request

1 Launch the **Resource Planning** tool (if it has not been launched already).

- The **Resource Planning** GUI (Figure 5) is displayed.

2 If the desired resource reservation request is not included in the list displayed on the **Resource Planning** GUI, click and hold on the **Activity Type** option button and select the appropriate category of activity (or select **All**) from the option menu that is displayed.

3 From the **Resource Planning** GUI, highlight (click on) the resource reservation request you want to modify then click on the **Modify…** button to access the **Resource Reservation Request Edit/Definition** GUI.

- The **Resource Reservation Request Edit/Definition** GUI (Figure 6) containing the data for the selected resource reservation request is displayed.

4 Observe the **Resource Reservation Request Edit/Definition** GUI **Status** field, which indicates the current status of the reservation request.

- **Status** is a Resource Planning Subsystem-generated entry based on user input in other fields.
- **Status** field may indicate "new," "validated," "rejected," "approved," "committed," "deleted," etc.

5 If assigning a sponsor to evaluate (validate) the resource reservation request, type the sponsor's User ID in the **Sponsor** field.

6 Make modifications by completing Steps 5 through 12 (as necessary) of the procedure for **Creating a Resource Reservation Request**.

- Make changes in the following fields as necessary:
  - **Activity.**
  - [Activity] **Description.**
  - **Resource…** [Selection]**.**
  - **Start Day.**
  - **Stop Day**
  - **Start Time.**
  - **Stop Time.**
  - **Frequency.**
  - **Interval…** [Selection]**.**
  - **Comments.**

7 If appropriate at this time, click on either the **Validated** button or the **Rejected** button.

- If evaluating the request as a sponsor.
- Refer to the procedure for **Validating or Rejecting a Resource Reservation Request** (the next section of this lesson).

8 After the appropriate data have been entered in the resource reservation request fields, click on the appropriate button(s) from the following selections:

- **Save** - to save the modified resource reservation request and dismiss the **Resource Reservation Request Edit/Definition** GUI.
- **Clear** - to clear entries without dismissing the **Resource Reservation Request Edit/Definition** GUI. Once cleared, the entries are deleted from the system.
- **Cancel** - to exit the **Resource Reservation Request Edit/Definition** GUI without saving the modified request.

Validating or Rejecting a Resource Reservation Request

All resource reservation requests must be validated and approved before scheduling. Validation is the process by which a request is checked to ensure that it is complete and reasonable (requested resources are appropriate for the stated activity).

After reviewing a resource reservation request, the Resource Planner may choose to consult with appropriate DAAC staff or assign a staff member ("sponsor") to validate the request. When a resource reservation request has been evaluated by a sponsor and either validated or rejected, the status of the request, as viewed on the **Resource Planning** GUI (Figure 2), changes to the newly assigned status.

Before evaluating a resource reservation request for the purpose of validating or rejecting it, the evaluator (sponsor) must know which request is to be evaluated.

The procedure for validating or rejecting a resource reservation request starts with the assumption that the sponsor has logged in to the ECS system and the proper desktop environment is being displayed.

Validating or Rejecting a Resource Reservation Request

---

1 Launch the **Resource Planning** tool (if it has not been launched already).

- The **Resource Planning** GUI (Figure 5) is displayed.

2 If the desired resource reservation request is not included in the list displayed on the **Resource Planning** GUI, click and hold on the **Activity Type** option button and select the appropriate category of activity (or select **All**) from the option menu that is displayed.

3 From the **Resource Planning** GUI, highlight (click on) the resource reservation request you want to validate then click on the **Modify…** button to gain access to the **Resource Reservation Request Edit/Definition** GUI.

- The **Resource Reservation Request Edit/Definition** GUI (Figure 6) containing the data for the selected resource reservation request is displayed.

4 Evaluate the entries in the **Resource Reservation Request Edit/Definition** GUI fields, especially the following fields:

- **Activity.**
- **Description.**
- **Priority.**
- **Start Day.**
- **Stop Day.**
- **Start Time.**

- **Stop Time.**
- **Frequency**
- **Status.**
- **Comments.**

5 Click on the **Resource…** button.

- The **Resources Selection** GUI (Figure 7) is displayed.

6 Evaluate the entries in the **Resources** and **Selected Resources** fields.

7 Click on the **Cancel** button.

8 Click on the **Interval…** button.

- The **Interval Selection** GUI (Figure 8) is displayed.

9 Evaluate the entries in the **Unselected Intervals** and **Selected Intervals** fields.

10 Click on the **Cancel** button.

11 Click on either the **Validated** button or the **Rejected** button as appropriate.

- **Validated** indicates that the reservation request is complete and "makes sense;" i.e., the request includes the appropriate resources consistent with the type of activity that is being proposed.
- **Rejected** indicates that the reservation request is rejected.

12 If appropriate, update the **Comments** field by typing relevant comments concerning the resource reservation request.

13 After the appropriate data have been entered in the resource reservation request fields, click on the appropriate button(s):

- **Save** - to save the modified resource reservation request and dismiss the **Resource Reservation Request Edit/Definition** GUI.
- **Clear** - to clear entries without dismissing the **Resource Reservation Request Edit/Definition** GUI. Once cleared, the entries are deleted from the system.
- **Cancel** - to exit the **Resource Reservation Request Edit/Definition** GUI without saving the modified request.

Approving a Resource Reservation Request

As previously mentioned all resource reservation requests must be validated and approved before scheduling. The resource reservation request approval process has the following general steps:

- Reviews of the resource reservation request reveal no objections to the resource usage described in the request.
  - — The sponsor has validated the resource reservation request (request status is "validated").
  - — The resource reservation request review board has confirmed that the reserved resources will not have adverse effects on high-priority activities and has approved the resource reservation request (and quite possibly several others).
- The Resource Planner changes the status of the resource reservation request to "approved" (enters the approval into the Planning Subsystem).
- The Planning Subsystem checks for conflicts between the resource reservation and other reservations.
- If conflicts are detected…
  - — a dialog box pops up indicating that there are conflicts that must be resolved.
  - — the Resource Planner resolves the conflicts, making modifications to resource reservation requests as necessary.

The Planning Subsystem allows the approval of a resource reservation request only if there are no scheduling conflicts. The Resource Planner may have to take modified resource reservation requests to the review board for approval before "approving" them to the Planning Subsystem.

The procedure for approving one or more resource reservation requests starts with the assumption that the Resource Planner has logged in to the ECS system and the proper desktop environment is being displayed. Furthermore, it is assumed that the Resource Planner knows which resource reservation request(s) should be approved (among those that have been validated).

Approving a Resource Reservation Request

---

1 Launch the **Resource Planning** tool (if it has not been launched already).

- The **Resource Planning** GUI (Figure 5) is displayed.

2 If the desired resource reservation request is not included in the list displayed on the **Resource Planning** GUI, click and hold on the **Activity Type** option button and select the appropriate category of activity (or select **All**) from the option menu that is displayed.

3 Highlight (click on) the resource reservation request you want to approve, then click on the **Approve** button to request approval from the Planning Subsystem.

- If there are no resource conflicts resulting from the approval of the resource reservation request, the entry in the **Status** column indicates that the request is "Approved" (changes from “Validated.”)
- If there are resource conflicts resulting from the attempt to approve the resource reservation request, a pop-up dialog box appears indicating that the approval failed and making reference to the **Message Handler** GUI (Figure 1) for further information.
- To view a graphical representation of the resource plan go to the procedure for **Reviewing a Resource Timeline** (subsequent section of this lesson).

4 If there are resource conflicts to be resolved, click on the **OK** button to collapse the pop-up dialog box.

5 If there are resource conflicts to be resolved, examine the pertinent message(s) on the **Message Handler** GUI then go to the procedure for **Editing A Resource Reservation Request** and modify resource reservation requests as necessary to resolve the conflicts.

- Revised resource reservation requests may require approval by the resource reservation request review board.
- Return to Step 2 to approve a modified resource reservation request.

Committing a Resource Reservation Request

After resource reservation requests have been validated and approved, and conflicts have been resolved, the Resource Planner can commit the resources specified in the requests. When the Resource Planner commits a resource reservation, the Planning Subsystem schedules the specified resources for the indicated activity.

The procedure for committing one or more resource reservation requests starts with the assumption that the Resource Planner has logged in to the ECS system and the proper desktop environment is being displayed. Furthermore, it is assumed that the Resource Planner knows which resource reservation request(s) should be committed (among those that have been approved).

Committing a Resource Reservation Request

---

1 Launch the **Resource Planning** tool (if it has not been launched already).

- The **Resource Planning** GUI (Figure 5) is displayed.

2 If the desired resource reservation request is not included in the list displayed on the **Resource Planning** GUI, click and hold on the **Activity Type** option button and select the appropriate category of activity (or select **All**) from the option menu that is displayed.

3 Highlight (click on) the resource reservation request you want to commit then click on the **Commit** button.

- The entry in the **Status** column indicates that the request is "Committed" (changes from “Approved.”)

4 To view a graphical representation of the resource plan go to the procedure for **Reviewing a Resource Timeline** (subsequent section of this lesson).

Deleting a Resource Reservation Request

If a resource reservation request is to be deleted (e.g., having been rejected and incapable of being satisfactorily modified), the request can be deleted. The resource reservation request is not removed from the resource reservation request list immediately; it is assigned a status of “deleted.” The deleted resource reservation request is available for future reporting but has no effect on resource planning. Eventually “deleted” resource reservations are removed from the PDPS database through routine database maintenance activities.

The procedure for deleting one or more resource reservation requests starts with the assumption that the Resource Planner has logged in to the ECS system and the proper desktop environment is being displayed. Furthermore, it is assumed that the Resource Planner knows which resource reservation request(s) should be deleted (among those listed).

Deleting a Resource Reservation Request

---

1 Launch the **Resource Planning** tool (if it has not been launched already).

- The **Resource Planning** GUI (Figure 5) is displayed.

2 If the desired resource reservation request is not included in the list displayed on the **Resource Planning** GUI, click and hold on the **Activity Type** option button and select the appropriate category of activity (or select **All**) from the option menu that is displayed.

3 Select **File → Delete** from the **Resource Planning** GUI pull-down menu.

- The entry in the **Status** column indicates that the request is "Deleted" (changes from whatever previous status was displayed.)

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Reviewing Resource Timelines and Generating Resource Planning Reports

Reviewing a Resource Timeline

The Resource Planning software has provisions that allow the operator to view the Resource Plan as a timeline. The timeline display represents a set of resources, arranged along the left side of the screen, and some period of time as indicated across the top edge of the screen.

The use of a resource over a period of time is represented by one or more "resource reservation" bars across the screen.

- A bar represents a time period during which a resource reservation has been planned.
- Each bar bears the name of the resource reservation and a brief description. Given the selection of a light enough color for the bar and a time span that allow a long enough bar, the name of the descriptive information can be seen on the bar.
  - — Placing the cursor on a resource reservation bar causes the name of the resource reservation to appear near the bottom of the timeline GUI.
- At those times when there is no reservation affecting a particular resource, the resource plan makes it available for its default activity.
  - — Example: By default all science processors will be used for science processing unless a reservation for some other activity (e.g., maintenance or testing) has been made for a specific science processor.

The procedure for reviewing a resource timeline starts with the assumption that the user has logged in to the ECS system and the proper desktop environment is being displayed.

Reviewing a Resource Timeline

1 Launch the **Resource Planning** tool (if it has not been launched already).

- The **Resource Planning** GUI (Figure 5) is displayed.

2 From the **Resource Planning** GUI click on the **Timeline** button.

- The **Resource Timeline** GUI (Figure 9) is displayed.

3 Adjust the **Resource Timeline** window size and the view of the timeline as necessary using the mouse.

- Grab a corner of the timeline window with the cursor and resize the window as desired.
- Scroll up or down through the full list of resources

- Scroll left or right to go backward or forward in time.

4 If a different time span is desired, click and hold on the **Show** option button and select (highlight then release the mouse button) the desired time span from the option menu that is displayed:

- **1 hr**
- **4 hr**
- **8 hr**
- **12 hr**
- **24 hr**
- **4 day**
- **1 week**
- **2 week**
- **1 month**
- **full scale**

5 If different display characteristics are desired, select the appropriate menu choice from the **Display** pull-down menu:

- **Change colors** (redefine the color coding of the timeline).
- **Change resources** (select specific resources to be displayed on the timeline).
- **Change Time Scale** (adjust the timeline's time scale).

6 If a particular display configuration is to be saved for use at a later time, select **File → Save Configuration** from the pull-down menu.

7 If a previously used/saved display configuration is desired in place of the current configuration, select **File → Load Configuration** from the pull-down menu and select the configuration to be loaded.

8 If it becomes necessary to exit from the timeline GUI, select **File → Quit** from the pull-down menu.

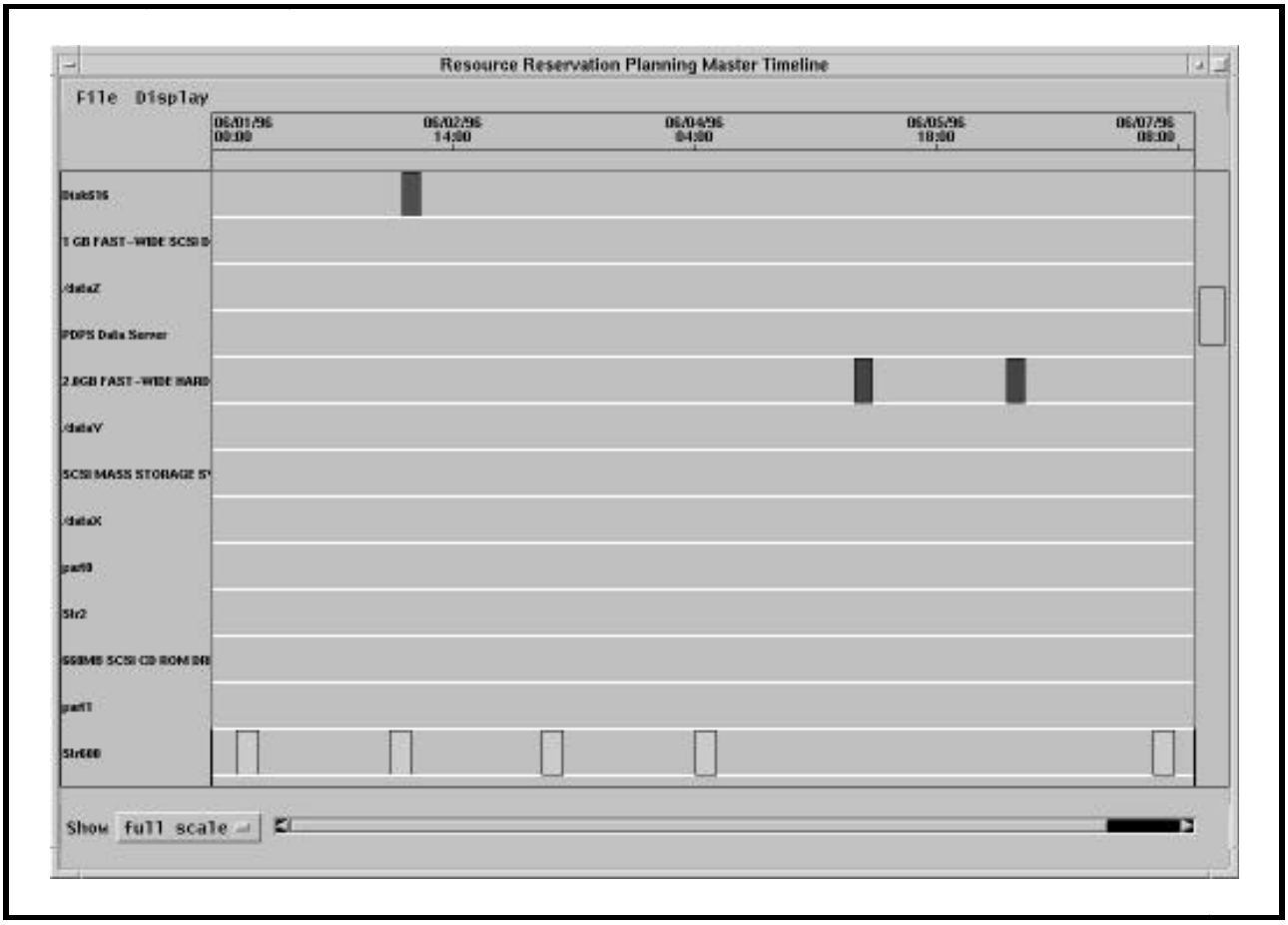

Figure 9. Resource Timeline GUI

Generating Resource Planning Reports

Members of the Production Team (e.g., Resource Planners, Production Planners and Production Monitors) can generate several different types of reports. The Report Generator GUI allows the Production Team to select from a variety of standard reports, including the following types of reports:

- Processing Status Report.
- Processing Errors Report.
- Resource Usage Report.
- Actual vs. Plan Report.

- Ground Event Resource Utilization Report.
- Ground Event Resource Schedule (by resource) Report.
- Ground Event Resource Schedule (Chronological) Report.
- Job Report.
- Dependency Jobs Report
- Disk Availability Report.
- Production Plan Report.

Reports that are of particular interest to Resource Planners are the Ground Event Resource Usage Report and the Ground Event Resource Schedule Reports (chronological or by resource).

Ground Event Resource Usage Report - The report summarizes the resource usage for the day. In addition, comparisons for the average of resource usage from the successful Data Processing Requests (DPRs) for the preceding seven (7) and 30 days are also produced daily.

Ground Event Resource Schedule Report - The report summarizes the scheduling of resources in order (either chronologically or by resource).

The procedure for generating resource planning reports starts with the assumption that the Resource Planner has logged in to the ECS system and the proper desktop environment is being displayed.

Generating Resource Planning Reports

---

1 Launch the **Resource Planning** tool (if it has not been launched already).

- The **Resource Planning** GUI (Figure 5) is displayed.

2 From the **Resource Planning** GUI click on the **Report** button.

- The **Report Generator** GUI (Figure 10**)** is displayed.
- The **Report Generator** GUI provides access to both resource planning and production planning reports.

3 Click and **hold** on the **Report Generator** GUI **Report** option button to display a menu of reports.

- The following menu of reports is displayed:
  - **Processing Status Report.**
  - **Processing Errors Report.**
  - **Resource Usage Report.**
  - **Actual vs. Plan.**

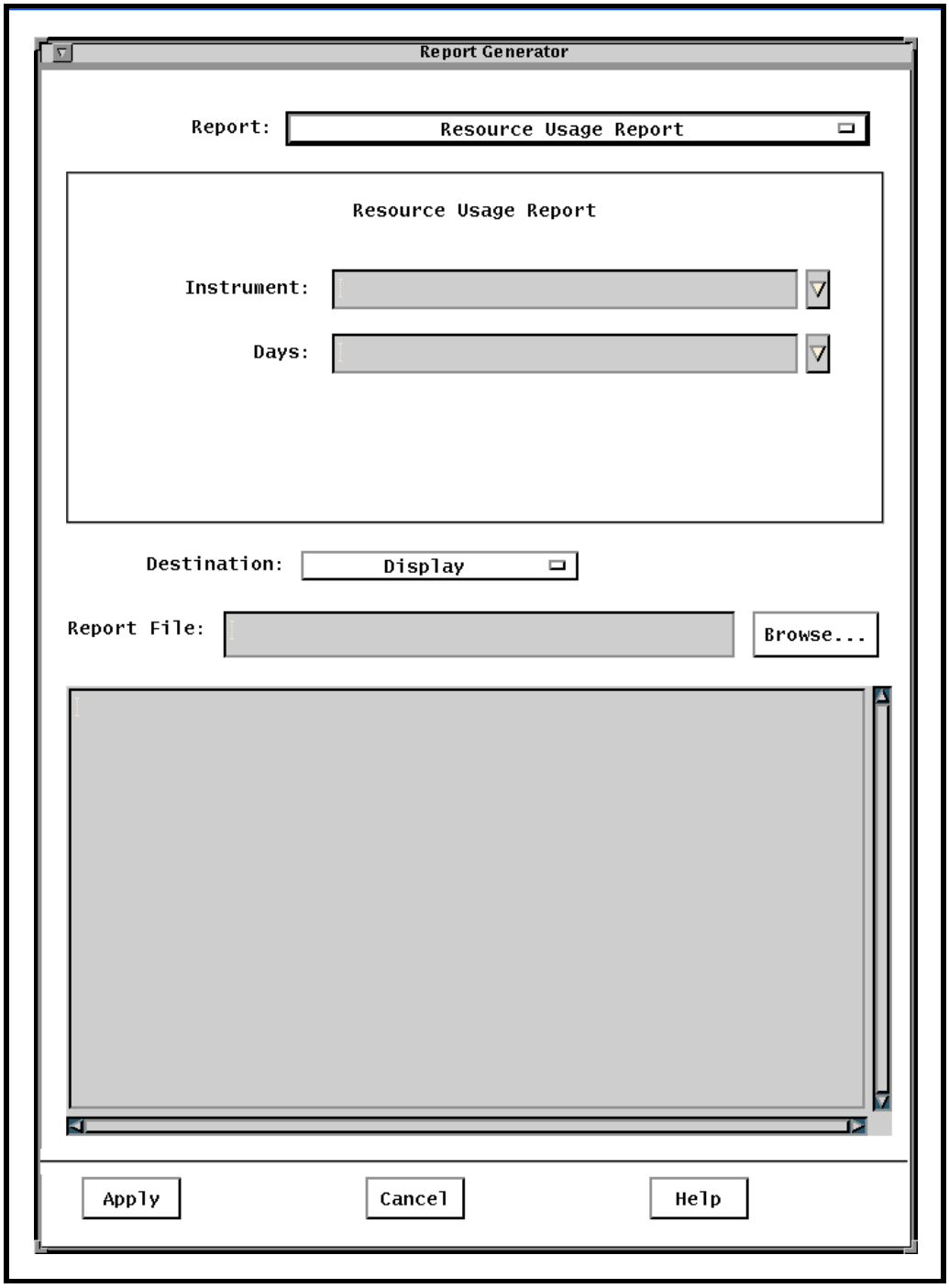

Figure 10. Report Generator GUI

- — **Ground Event Resource Utilization.**
- — **Ground Event Resource Schedule (by resource).**
- — **Ground Event Resource Schedule (Chronological).**
- — **Job Report.**
- — **Dependency Jobs Report.**
- — **Disk Availability Report.**
- — **Production Plan Report.**

4 Select the desired report by moving the cursor to the desired report in the menu to highlight it, then release the mouse button.

- Selected type of report appears on the **Report** option button.
- Report fields appear in the **Report Selection** area (if applicable).

5 Enter (type/select) report parameters in the fields that appear in the **Report Selection** area (if applicable).

- Parameters vary with the type of report selected.
  - — No parameters (Ground Event Resource Utilization Report or Disk Availability Report).
  - — **Instrument**, **Days** (Processing Status Report, Processing Errors Report, Resource Usage Report, Actual vs. Plan Report).
  - — **Start Date**, **End Date** (Ground Event Resource Schedule Report (by Resource), Ground Event Resource Schedule Report (Chronological)).
  - — **Name**, **Start Date**, **End Date** (Production Plan Report).
  - — **DPR I.D.** (Job Dependency Report).
- To select options for fields that have options (i.e., **Instrument**, **Days**) click and hold the option button for the field to display a menu from which values (e.g., **CERES** or **LIS**; **1**, **7**, **30**, **90**) can be chosen.

6 Click and **hold** the **Destination** option button and select (highlight then release the mouse button) the proper destination from the option menu that is displayed.

- The following menu of destinations is displayed:
  - — **Display** is the default and is always selected.
  - — **Printer** will send the file to the selected printer.
  - — **Data Document Server** will save the file to the Document Data Server.
  - — **File** will save the file in a specified directory (selected in the next step).

- Selected destination appears in the **Destination** field.

7 If **File** was selected in Step 6, either type the report file destination (path/filename) in the **Report File** field or use the browse tool (**Browse…** button) to select/identify the file.

8 Click on the **Apply** button to generate the report.

- The report is generated.
- Report appears in the **Report** area of the GUI.
- Report file is printed, if **Printer** was selected in Step 6.
- Report file is saved to the document data server if **Data Document Server** was selected in Step 6.
- Report file is saved to the specified local directory if **File** was selected in Step 6.

9 To exit from the **Report Generator** GUI (e.g., when the report has been adequately reviewed on the screen), click on the **Cancel** button to close the GUI.

- **Report Generator** GUI is closed.

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Defining Resources

The resource planning subsystem is initialized with a list of resources from the MSS-managed list of configured system resources (i.e., the Baseline Manager database). Resources may be added to or deleted from the resource planning list without affecting the MSS-managed configuration list. One benefit of using a separate resource planning list is to facilitate planning future activities that require resources which are not currently available but are expected to become available before the start of the activity requiring their use.

The Resource Definition tool allows the authorized operator to perform the following functions:

- synchronize the resource planning list with the baseline set of system resources.
- add or delete future resources not contained in the baseline resource list.
- modify the characteristics of resources.

Modifications to the resource planning list are recorded in the PDPS database. The modifications are **not** recorded in the Baseline Manager database.

The hardware resources for which resource planning can be supported include host computers, storage devices, as well as "strings" that are made up of computers and storage devices.

Adding a Resource

The procedures for adding a resource to the resource planning list may involve any of the following types of resources:

- "AutoSys" (production processing software).
- "computers" (virtual computers composed of CPU-disk combinations).
- "real computers."
- "disks."
- generic "hardware."
- "strings" (sets of computers).

The procedure for adding a resource starts with the assumption that the Resource Planner has logged in to the ECS system and the proper desktop environment is being displayed.

Adding a Resource

1 Launch the **Resource Definition** tool (if it has not been launched already).

- The **Resource Definition** GUI (Figure 4) is displayed.

2 Observe the resource type listed currently listed on the **Resource Definition** GUI **Resource Type** option button. If a different resource type is to be added, click and hold on the **Resource Type** option button and select (highlight then release the mouse button) the applicable resource type from the option menu that is displayed:

- **Autosys.**
- **Computer.**
- **Disk.**
- **Hardware.**
- **Real Computer.**
- **String.**

3 Click on the **New…** button.

- The selection of the **Resource Type** determines which GUI appears when the **New…** button is activated. The following selections are available and require performance of the specified procedure to complete the addition of the resource:
  - — **Autosys** - The **Autosys Resource Details** GUI (Figure 11) is displayed. Perform the procedure for **Defining AutoSys Resources** (subsequent section of this lesson).
  - — **Computer** - The **[Virtual] Computer Resource Details** GUI (Figure 12) is displayed. Perform the procedure for **Defining Virtual Computer Resources** (subsequent section of this lesson).
  - — **Real Computer** - The **Real Computer Resource Details** GUI (Figure 13) is displayed. Perform the procedure for **Defining Real Computer Resources** (subsequent section of this lesson).
  - — **Disk** - The **Disk Resource Details** GUI (Figure 14) is displayed. Perform the procedure for **Defining Disk Resources** (subsequent section of this lesson).
  - — **Hardware** - The **Hardware Resource Details** GUI (Figure 15) is displayed. Perform the procedure for **Defining Hardware Resources** (subsequent section of this lesson).
  - — **String** - The **String Resource Details** GUI (Figure 16) is displayed. Perform the procedure for **Defining String Resources** (subsequent section of this lesson).

Defining AutoSys Resources

The procedure for defining AutoSys resources is subordinate to the procedure for adding a resource. The AutoSys resources definition procedure starts with the assumption that the Resource Planner has launched the **Resource Definition** GUI (Figure 4) and the GUI is currently being displayed.

Defining AutoSys Resources

---

1 Click and hold on the **Resource Definition** GUI **Resource Type** option button, then select **Autosys** from the option menu that is displayed.

2 Click on the **New…** button.

- The **Autosys Resource Details** GUI (Figure 11) is displayed.
- The **Autosys Resource Details** GUI shows several fields, including the following pair of lists:
  - — **Strings** - A list of previously defined strings (sets of computers).
  - — **Associated Strings -** List of sets of computers that are associated with the AutoSys resource.

3 Type the name of the AutoSys resource to be added to the list of available resources in the **Autosys Resource Details** GUI **Resource Name** field.

4 If the system-generated default activity (indicated on the **Activity** option button) needs to be changed, click and hold on the **Activity** button and select (highlight then release the mouse button) the appropriate category of activity from the option menu that is displayed.

5 Move string resources between the **Strings** and **Associated Strings** lists as necessary by selecting (highlighting) the string to be moved, then clicking on the right or left arrow button (as applicable) to move the string to the other list.

- Highlighted string disappears from one list and appears on the other.

6 Type any relevant comments in the **Comments** field.

7 When all data concerning the AutoSys resource to being defined have been entered in the correct fields, click on the appropriate button from the following selections:

- **Save** - to save the AutoSys resource data and return to the **Resource Definition** GUI.
- **Cancel** - to return to the **Resource Definition** GUI without saving the AutoSys resource data.

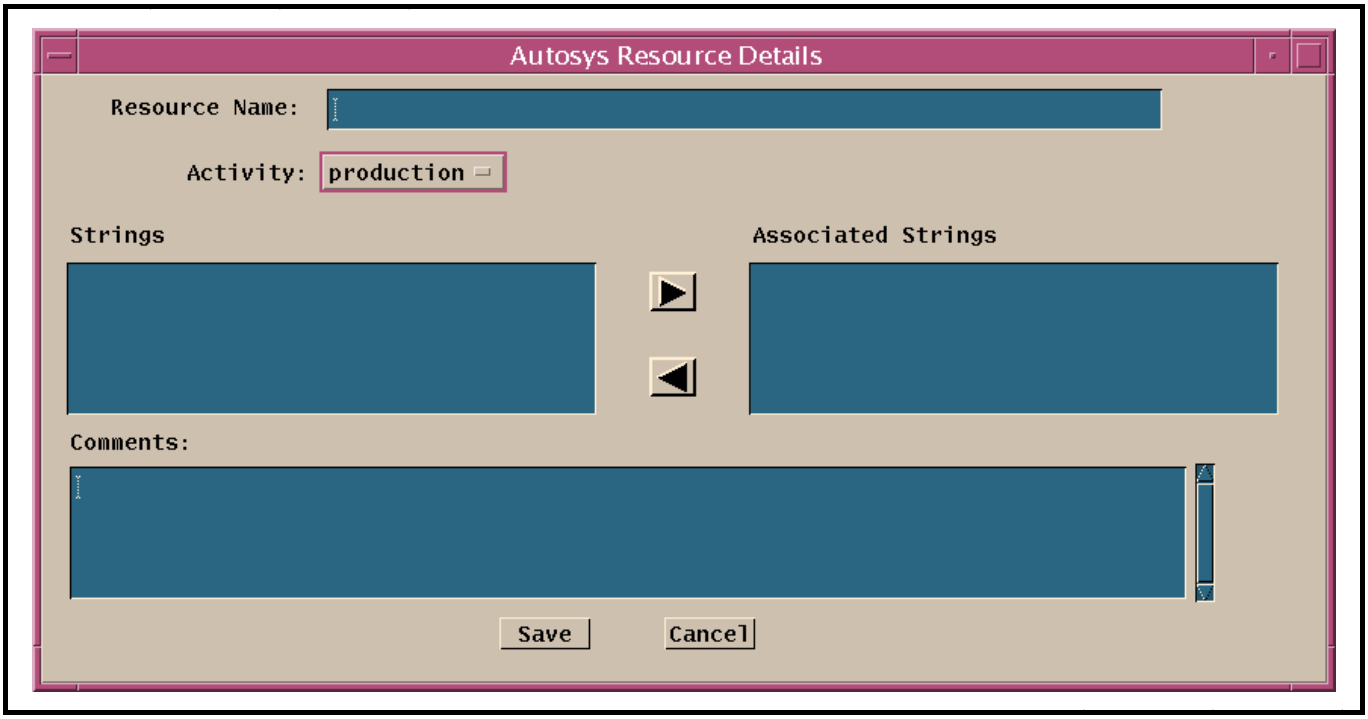

Figure 11. Autosys Resource Details GUI

Defining Virtual Computer Resources

The procedure for defining virtual computer resources is subordinate to the procedure for adding a resource. The virtual computer resources definition procedure starts with the assumption that the Resource Planner has launched the **Resource Definition** GUI (Figure 2) and the GUI is currently being displayed.

Defining Virtual Computer Resources

---

1 Click and hold on the **Resource Definition** GUI **Resource Type** option button, then select **Computer** from the option menu that is displayed.

2 Click on the **New…** button.

- The **[Virtual] Computer Resource Details** GUI (Figure 12) is displayed.

- The **Computer Resource Details** GUI shows several fields, including the following pair of lists:
  - — **Disks** - A list of the disks previously defined for the site.
  - — **Associated Disks -** List of disks that are associated with the computer. A computer without an associated disk is generally not a resource worth reserving.

3 Type the name of the computer resource to be added to the list of available resources in the **Computer Resource Details** GUI **Resource Name** field.

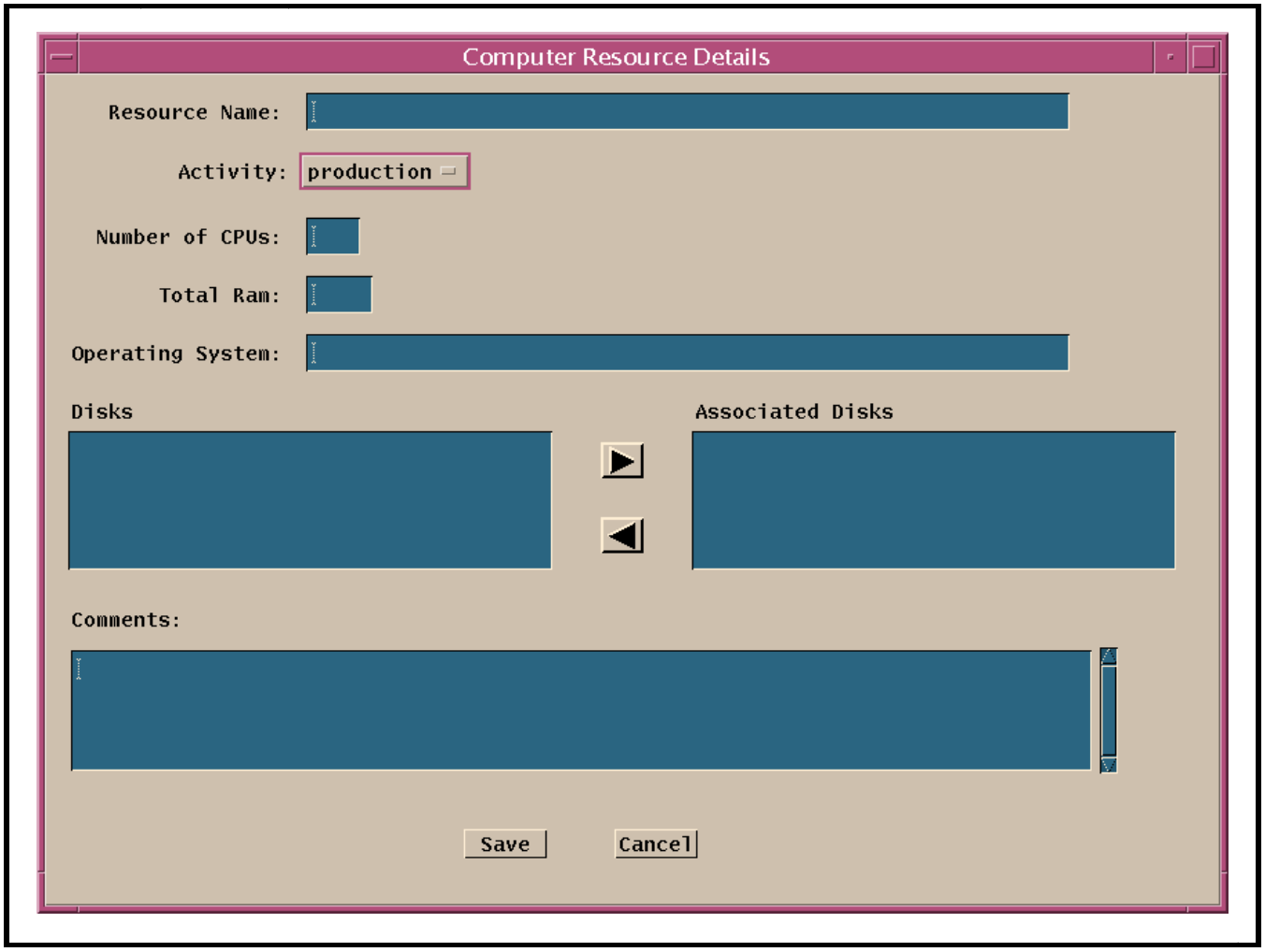

Figure 12. [Virtual] Computer Resource Details GUI

4 If the system-generated default activity (indicated on the **Activity** option button) needs to be changed, click and hold on the **Activity** button and select (highlight then release the mouse button) the appropriate category of activity from the option menu that is displayed.

5 Type the specified data concerning the virtual computer resource in the following fields:

- **Number of CPUs** - Number of central processing units (CPUs) in the virtual computer (mandatory entry).
- **Total RAM** - Virtual computer's total random-access memory (RAM) (mandatory entry).
- **Operating System** - Name and version of the computer's operating system (mandatory entry).

6 Move disk resources between the **Disks** and **Associated Disks** lists as necessary by selecting (highlighting) the disk to be moved, then clicking on the right or left arrow button (as applicable) to move the disk to the other list.

- Highlighted disk disappears from one list and appears on the other.

7 Type any relevant comments in the **Comments** field.

8 When all data concerning the virtual computer resource to be added have been entered in the correct fields, click on the appropriate button from the following selections:

- **Save** - to save the virtual computer resource data and return to the **Resource Definition** GUI.
- **Cancel** - to return to the **Resource Definition** GUI without saving the virtual computer resource data.

Defining Real Computer Resources

The procedure for defining real computer resources is subordinate to the procedure for adding a resource. The real computer resources definition procedure starts with the assumption that the Resource Planner has launched the **Resource Definition** GUI (Figure 2) and the GUI is currently being displayed.

Defining Real Computer Resources

---

1 Click and hold on the **Resource Definition** GUI **Resource Type** option button, then select **Real Computer** from the option menu that is displayed.

2 Click on the **New…** button.

- The **Real Computer Resource Details** GUI (Figure 13) is displayed.

- The **Real Computer Resource Details** GUI shows several fields, including the following pair of lists:
  - — **Computers -** A list of computers previously defined for the site.
  - — **Associated Computers -** List of computers that are associated with the real computer.

3 Type the name of the real computer resource to be added to the list of available resources in the **Real Computer Resource Details** GUI **Resource Name** field.

4 If the system-generated default activity (indicated on the **Activity** option button) needs to be changed, click and hold on the **Activity** button and select (highlight then release the mouse button) the appropriate category of activity from the option menu that is displayed.

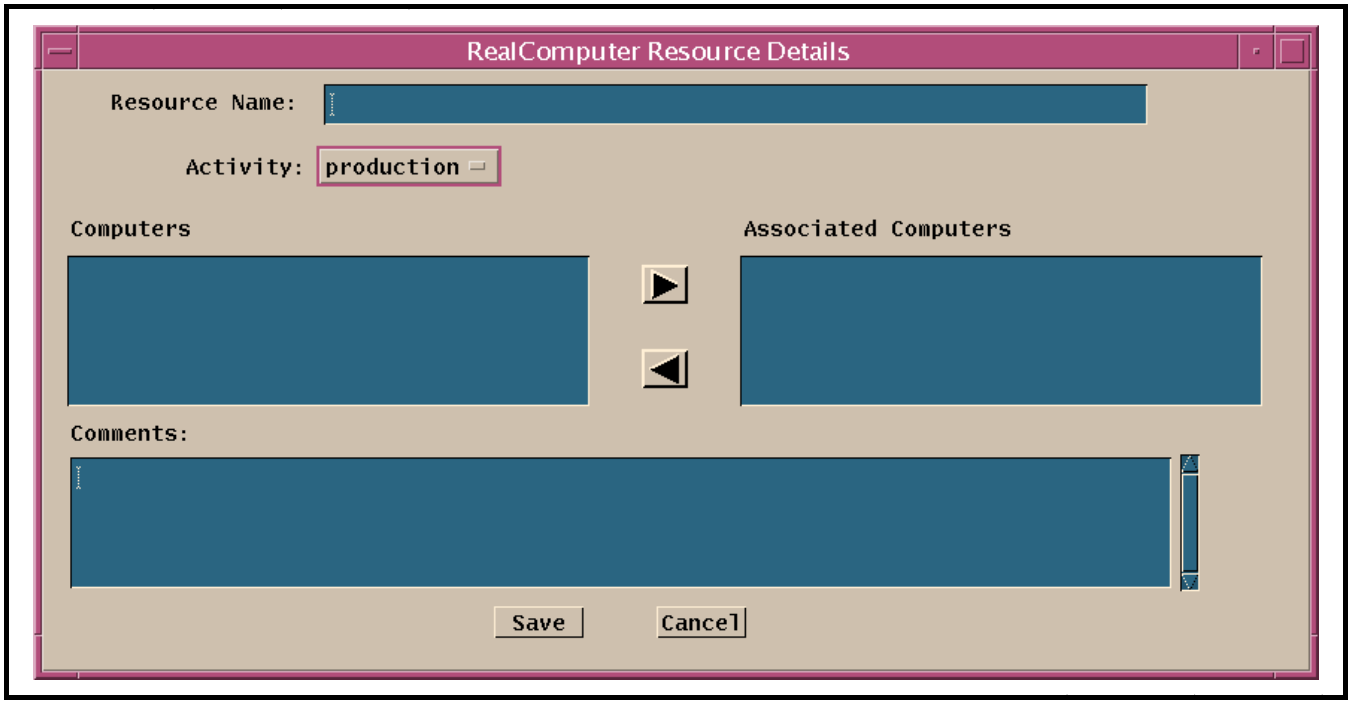

Figure 13. Real Computer Resource Details GUI

5 Move computer resources between the **Computers** and **Associated Computers** lists as necessary by selecting (highlighting) the computer to be moved, then clicking on the right or left arrow button (as applicable) to move the computer to the other list.

- Highlighted computer disappears from one list and appears on the other.

6 Type any relevant comments in the **Comments** field.

7 When all data concerning the real computer resource to be added have been entered in the correct fields, click on the appropriate button from the following selections:

- **Save** - to save the real computer resource data and return to the **Resource Definition** GUI.
- **Cancel** - to return to the **Resource Definition** GUI without saving the real computer resource data.

Defining Disk Resources

The procedure for defining disk resources is subordinate to the procedure for adding a resource. The disk resources definition procedure starts with the assumption that the Resource Planner has launched the **Resource Definition** GUI (Figure 2) and the GUI is currently being displayed.

Defining Disk Resources

---

1 Click and hold on the **Resource Definition** GUI **Resource Type** option button, then select **Disk** from the option menu that is displayed.

2 Click on the **New…** button.

- The **Disk Resource Details** GUI (Figure 14) is displayed.

3 Type the name of the disk resource to be added to the list of available resources in the **Disk Resource Details** GUI **Resource Name** field.

4 If the system-generated default activity (indicated on the **Activity** option button) needs to be changed, click and hold on the **Activity** button and select (highlight then release the mouse button) the appropriate category of activity from the option menu that is displayed.

5 Type the specified data concerning the disk resource in the following fields:

- **Partition Size** - size of the disk partition, in kilobytes (mandatory entry).
- **Block Size** - block size used for the disk in bytes (mandatory entry).
- **Comments** - relevant comments on the resource.

6 When all data concerning the disk resource to be added have been entered in the correct fields, click on the appropriate button from the following selections:

- **Save** - to save the disk resource data and return to the **Resource Definition** GUI.
- **Cancel** - to return to the **Resource Definition** GUI without saving the disk resource data.

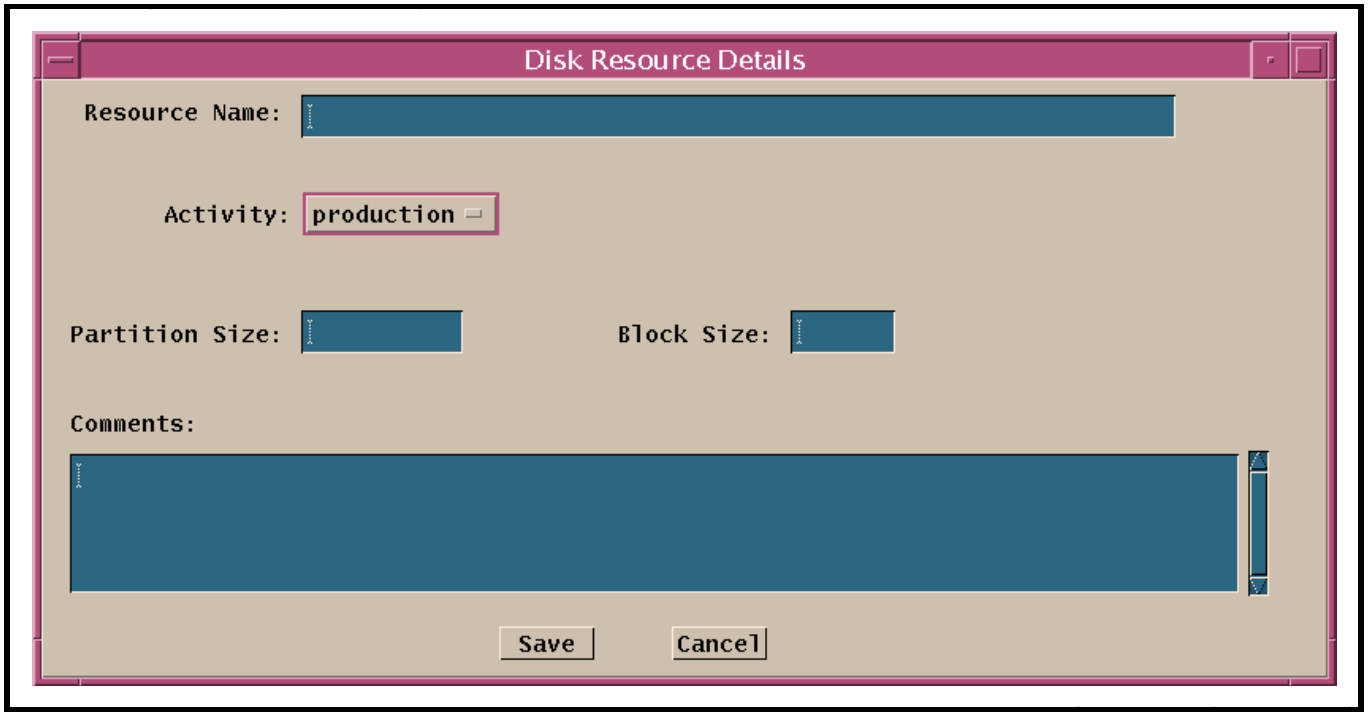

Figure 14. Disk Resource Details GUI

Defining Hardware Resources

The procedure for defining hardware resources is subordinate to the procedure for adding a resource. The hardware resources definition procedure starts with the assumption that the Resource Planner has launched the **Resource Definition** GUI (Figure 2) and the GUI is currently being displayed.

Defining Hardware Resources

---

1 Click and hold on the **Resource Definition** GUI **Resource Type** option button, then select **Hardware** from the option menu that is displayed.

2 Click on the **New…** button.

- The **Hardware Resource Details** GUI (Figure 15) is displayed.

3 Type the name of the hardware resource to be added to the list of available resources in the **Hardware Resource Details** GUI **Resource Name** field.

4 If the system-generated default activity (indicated on the **Activity** option button) needs to be changed, click and hold on the **Activity** button and select (highlight then release the mouse button) the appropriate category of activity from the option menu that is displayed.

5 Type any relevant comments concerning the resource in the **Comments** field.

6 When all data concerning the hardware resource to be added have been entered in the correct fields, click on the appropriate button from the following selections:

- **Save** - to save the hardware resource data and return to the **Resource Definition** GUI.
- **Cancel** - to return to the **Resource Definition** GUI without saving the hardware resource data.

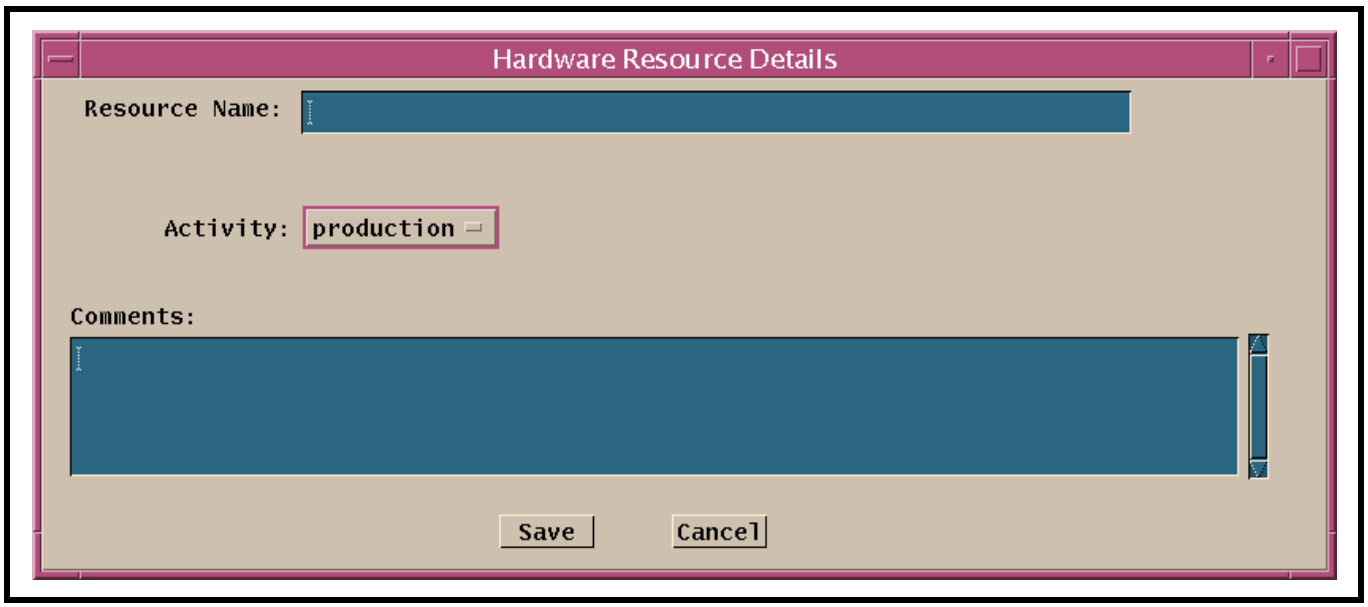

Figure 15. Hardware Resource Details GUI

Defining String Resources

The procedure for defining string resources is subordinate to the procedure for adding a resource. The string resources definition procedure starts with the assumption that the Resource Planner has launched the **Resource Definition** GUI (Figure 2) and the GUI is currently being displayed.

1 Click and hold on the **Resource Definition** GUI **Resource Type** option button, then select **String** from the option menu that is displayed.

2 Click on the **New…** button.

- The **String Resource Details** GUI (Figure 16) is displayed.
- The **String Resource Details** GUI shows several fields, including the following pair of lists:
  - — **Computers** - A list of computers previously defined for the site.
  - — **Associated Computers -** List of computers that are associated with the string.

3 Type the name of the string resource to be added to the list of available resources in the **String Resource Details** GUI **Resource Name** field.

4 If the system-generated default activity (indicated on the **Activity** option button) needs to be changed, click and hold on the **Activity** button and select (highlight then release the mouse button) the appropriate category of activity from the option menu that is displayed.

5 Move computer resources between the **Computers** and **Associated Computers** lists as necessary by selecting (highlighting) the computer to be moved, then clicking on the right or left arrow button (as applicable) to move the computer to the other list.

- Highlighted computer disappears from one list and appears on the other.

6 Type any relevant comments in the **Comments** field.

7 When all data concerning the string resource to be added have been entered in the correct fields, click on the appropriate button from the following selections:

- **Save** - to save the string resource data and return to the **Resource Definition** GUI.
- **Cancel** - to return to the **Resource Definition** GUI without saving the string resource data.

Modifying a Resource

The procedures for modifying a resource involve making changes to any of the various types of resources (e.g., computers, disks, strings) on the resource planning list using the same GUIs that are used for adding resources. The procedure for modifying a resource starts with the assumption that the Resource Planner has logged in to the ECS system and the proper desktop environment is being displayed.

Figure 16. String Resource Details GUI

Modifying a Resource

1 Launch the **Resource Definition** tool (if it has not been launched already).

- The **Resource Definition** GUI (Figure 4) is displayed.

2 If the resource to be modified is not included in the list displayed on the **Resource Definition** GUI, click and hold on the **Resource Type** option button and select (highlight then release the mouse button) the appropriate category of resource from the option menu that is displayed.

3 Select (highlight) the resource to be modified in the **Resource Name** list displayed on the **Resource Definition** GUI, then click on the **Modify…** button to gain access to the appropriate resource details GUI.

- The type of resource selected determines which of the following GUIs appears when the **Modify…** button is activated:
  - — **Autosys.**
  - — **Computer [virtual computer]**.

— **Real Computer**.

— **Disk.**

— **Hardware.**

— **String.**

4 Make desired changes to the fields of the GUI as necessary in accordance with the applicable steps of the appropriate procedure from the following list:

- **Defining AutoSys Resources**.
- **Defining Virtual Computer Resources**.
- **Defining Real Computer Resources**.
- **Defining Disk Resources**.
- **Defining Hardware Resources**.
- **Defining String Resources**.

Deleting a Resource

The procedures for deleting a resource start with the assumption that the Resource Planner has logged in to the ECS system and the proper desktop environment is being displayed.

Deleting a Resource

1 Launch the **Resource Definition** tool (if it has not been launched already).

- The **Resource Definition** GUI (Figure 4) is displayed.

2 If the resource to be deleted is not included in the **Resource Name** list displayed on the **Resource Definition** GUI, click and hold on the **Resource Type** option button and select (highlight then release the mouse button) the appropriate category of resource from the option menu that is displayed.

3 Select (highlight) the resource to be deleted in the **Resource Name** list displayed on the **Resource Definition** GUI, then click on the **Delete** button.

- A pop-up dialogue box appears, asking you if you really want to delete the selection.

4 Click on the appropriate button from the following selections:

- **OK** - to label the resource “deleted.”
- **Cancel** - to leave the **Resource Definition** list unchanged.

Synchronizing Resource Listings

The procedure for synchronizing resource listings reloads the **Resource Definition** list from the Baseline Manager database, making the list consistent with the database. The retrieval of configuration information is a two-step process. First a Tivoli job is run that generates a file of configuration information used by Resource Planning. This job is run by clicking on the **Fetch Baseline** button. When the Tivoli job has completed, the operator clicks on the **Load Baseline** button to extract the needed information from the Tivoli-generated file and load it into the PDPS database. The procedure starts with the assumption that the Resource Planner has logged in to the ECS system and the proper desktop environment is being displayed.

Synchronizing Resource Listings

---

1 Launch the **Resource Definition** tool (if it has not been launched already).

- The **Resource Definition** GUI (Figure 4) is displayed.

2 Click on the **Fetch Baseline** button to generate a Tivoli file with the baseline data.

3 When the Tivoli job has completed, click on the **Load Baseline** button.

Practical Exercise

Introduction

This exercise is designed to give the students practice in resource planning activities.

Equipment and Materials

One ECS workstation or X terminal per student.

Statement of the requirements for the exercise.

Operations Tools Manual, 609-CD-003-001, one copy per student.

Mission Operation Procedures for the ECS Project, 611-CD-004-001, one copy per student.

Launching Resource Planning Applications

The exercise involves launching resource planning applications. The exercise begins with a student acting in the role of a resource user receiving the necessary information/requirements for launching resource reservation applications. The student launches the resource planning tool and resource definition tool consistent with the requirements.

Perform the following steps:

1. Launch the Resource Planning tool.
2. Access the Resource Definition tool.

Creating a Resource Reservation Request

The exercise involves the preparation of a resource reservation request. The exercise begins with a student acting in the role of a resource user receiving the necessary information/requirements for creating a resource reservation request. The student prepares a resource reservation request that is consistent with the requirements.

Perform the following steps:

1. Access the Resource Planning tool.
2. Prepare a resource reservation request that is consistent with the written or stated requirements.
3. Save the resource reservation request.

Editing/Modifying a Resource Reservation Request

The exercise requires the editing of a resource reservation request. The exercise begins with a student acting in the role of a resource user receiving the necessary information/requirements for editing an existing resource reservation request. The student modifies the resource reservation request consistent with the requirements.

Perform the following steps:

1. Access the Resource Planning GUI.
2. Select the resource reservation request to be modified.
3. Make resource reservation request modifications consistent with the written or stated requirements.
4. Save the modified resource reservation request.

Validating or Rejecting a Resource Reservation Request

The exercise involves the validation or rejection of a resource reservation request. The exercise begins with a student acting in the role of "sponsor" receiving the necessary information/requirements for validating or rejecting a resource reservation request. The student validates or rejects a resource reservation request as specified in the requirements.

Perform the following steps:

1. Access the Resource Planning GUI.
2. Access the specified resource reservation request.
3. Evaluate the entries in the resource reservation request fields.
4. Validate or reject the resource reservation request as specified in the requirements.
5. Save the modified resource reservation request.

Approving Resource Reservation Requests

The exercise involves approving resource reservation requests. The exercise begins with a student acting in the role of Resource Planner receiving the necessary information/requirements for approving a resource reservation request. The student approves a resource reservation request consistent with the requirements.

Perform the following steps:

1. Access the Resource Planning GUI.
2. Access the specified resource reservation request.
3. Approve the resource reservation request as specified in the requirements.

4. Save the modified resource reservation request.

Committing a Resource Reservation Request

The exercise involves committing resource reservation requests. The exercise begins with a student acting in the role of Resource Planner receiving the necessary information/requirements for committing resource reservation requests. The student commits resource reservation requests consistent with the requirements.

Perform the following steps:

1. Access the Resource Planning GUI.
2. Access the specified resource reservation request(s).
3. Commit the resource reservation request(s) as specified in the requirements.

Deleting a Resource Reservation Request

The exercise involves committing resource reservation requests. The exercise begins with a student acting in the role of Resource Planner receiving the necessary information/requirements for deleting resource reservation requests. The student deletes resource reservation requests consistent with the requirements.

Perform the following steps:

1. Access the Resource Planning GUI.
2. Access the specified resource reservation request(s).
3. Commit the resource reservation request(s) as specified in the requirements.

Reviewing a Resource Timeline

The exercise involves reviewing a resource timeline. The exercise begins with a student acting in the role of Resource Planner receiving the necessary information/requirements for reviewing a resource timeline. The student reviews the specified resource timeline and responds to questions concerning timeline characteristics.

Perform the following steps:

1. Access the Resource Planning GUI.
2. Access the specified resource timeline.
3. Review the specified resource timeline.
4. Respond to questions concerning the resource timeline without error.

Generating Resource Planning Reports

The exercise involves generating resource planning reports. The exercise begins with a student acting in the role of Resource Planner receiving the necessary information/requirements for generating resource planning reports. The student generates resource planning reports as specified in the requirements.

Perform the following steps:

1. Access the Resource Planning GUI.
2. Access the Resource Planning Reports GUI.
3. Generate the resource planning report(s) specified in the requirements.
4. Exit from the Resource Planning Reports GUI.

Adding Resources to the Resource Planning List

The exercise involves adding resources to the resource planning list. The exercise begins with a student acting in the role of Resource Planner receiving the necessary information/requirements for adding resources to the resource planning list. The student adds resources to the resource planning list as specified in the requirements.

Perform the following steps:

1. Access the Resource Definition GUI.
2. Access the appropriate detail GUI(s) for the type(s) of resource(s) to be added.
3. Define the type(s) of resource(s) to be added as specified in the requirements.
4. Save the added resource(s) in the resource planning list.

Modifying Resources on the Resource Planning List

The exercise involves modifying resources on the resource planning list. The exercise begins with a student acting in the role of Resource Planner receiving the necessary information/requirements for modifying resources on the resource planning list. The student modifies resources on the resource planning list as specified in the requirements.

Perform the following steps:

1. Access the Resource Definition GUI.
2. Access the appropriate detail GUI(s) for the type(s) of resource(s) to be modified.
3. Modify the definition of the resource(s) as specified in the requirements.
4. Save the modifications to the resource planning list.

Deleting Resources from the Resource Planning List

The exercise involves deleting resources from the resource planning list. The exercise begins with a student acting in the role of Resource Planner receiving the necessary information/requirements for deleting resources from the resource planning list. The student deletes resources from the resource planning list as specified in the requirements.

Perform the following steps:

1. Access the Resource Definition GUI.
2. Highlight the resource(s) to be deleted.
3. Delete the resource(s) as specified in the requirements.

Synchronizing Resource Listings

The exercise involves synchronizing resource listings. The exercise begins with a student acting in the role of Resource Planner receiving the necessary information/requirements for synchronizing resource listings. The student synchronizes resource listings as specified in the requirements.

Perform the following steps:

1. Access the Resource Definition GUI.
2. Synchronize resource listings.

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Slide Presentation

Slide Presentation Description

The following slide presentation represents the slides used by the instructor during the conduct of this lesson.

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RESOURCE PLANNING

ECS Version 2.0 Training

625-CD-007-001

Overview of Lesson

- **Introduction**
- **Resource Planning Concepts**
- **Launching Resource Planning Applications**
- **Creating a Resource Reservation Request**
- **Editing a Resource Reservation Request**
- **Reviewing Resource Timelines and Generating Resource Planning Reports**
- **Defining Resources**

Overview of Lesson (Cont.)

- **Practical Exercise**
  - **Launching Resource Planning Applications**
  - **Creating a Resource Reservation Request**
  - **Editing/Modifying a Resource Reservation Request**
  - **Validating or Rejecting a Resource Reservation Request**
  - **Approving Resource Reservation Requests**
  - **Committing a Resource Reservation Request**
  - **Deleting a Resource Reservation Request**
  - **Reviewing a Resource Timeline**
  - **Generating Resource Planning Reports**

Overview of Lesson (Cont.)

- **Practical Exercise (Cont.)**
  - **Adding Resources to the Resource Planning List**
  - **Modifying Resources on the Resource Planning List**
  - **Deleting Resources from the Resource Planning List**
  - **Synchronizing Resource Listings**

Objectives

- **OVERALL:**
  - **Develop proficiency in the procedures that apply to resource planning operations**
- **SPECIFIC:**
  - **Describe the general steps in the resource planning process**
  - **Perform the steps involved in...**
    - **launching resource planning applications**
    - **preparing a resource reservation request**
    - **editing/modifying a resource reservation request**
    - **validating or rejecting a resource reservation request**
    - **approving resource reservation requests**
    - **committing a resource reservation request**

Objectives (Cont.)

- **SPECIFIC (Cont.):**
  - **Perform the steps involved in...**
    - » **deleting resource reservation requests**
    - » **reviewing a resource timeline**
    - » **generating resource planning reports**
    - » **adding resources to the resource planning list**
    - » **modifying resources on the resource planning list**
    - » **deleting resources from the resource planning list**
    - » **synchronizing resource listings**
- **STANDARD:**
  - **Mission Operation Procedures for the ECS Project - 611-CD-004-001**

Resource Planning Concepts

- **The Resource Planning Process**
  - **define and control reservations for non-routine "ground events"**
    - **» testing**
    - **» training**
    - **» simulations**
    - **» preventive maintenance**
    - **» system upgrades**
    - **» any other non-routine event that requires Distributed Active Archive Center (DAAC) resources**

Resource Planning Concepts (Cont.)

- resource planning specifies resources which are also used in production planning
  - » resource planning and production planning are interdependent
- resource planning occurs on a…
  - » biweekly basis for 30-day plans
  - » weekly basis for 10-day plans
  - » a daily basis
- ground events can be entered at any time
- resource plan reports are filed in directories on a Document Data Server (DDSRV) host

Resource Planning Concepts (Cont.)

- **Resource Planning Tools**
  - **Resource Planning tool**
    - » **submitting requests for time on resources**
    - » **scheduling ground events against ECS resources**
  - **Resource Definition tool**
    - » **adding resources**
    - » **modifying the characteristics of resources**
    - » **deleting resources**

Resource Planning Concepts (Cont.)

- **ECS resource definitions**
  - **“AutoSys”**
  - **“computers” (virtual computers)**
  - **“real computers”**
  - **“disks”**
  - **generic “hardware”**
  - **“strings” (sets of computers and storage devices)**

Resource Planning Concepts (Cont.)

- **Resource Planning List (PDPS database)**
  - **initialized from the Baseline Manager database**
  - **resources may be added to or deleted from the resource planning list without affecting the Baseline Manager database**
  - **Resource Planner is able to specify resources that are not currently part of the baseline but will become available in the future**

Resource Planning Concepts (Cont.)

- **Resource Planning Process**
  - **Requesters submit resource reservation requests**
  - **Resource Planner evaluates validity of requests**
    - **» may forward requests to “sponsors” for validation**
  - **Resource Planner drafts Resource Plan from validated requests**
    - **» resolves conflicts**
  - **Review board evaluates plan**
  - **Board-approved requests are “committed”**

Launching Resource Planning Applications

- Resource Planning tool (Scheduling Interface)
- Resource Definition tool (Resource Editor)
- Message Handler
- System Name Server
- Resource Model
- Resource Timeline
- Report Generator

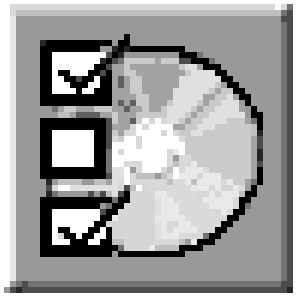
Launching Resource Planning Applications (Cont.)

- **Access**
  - **Submitting resource reservation requests**
    - » **all ECS personnel who may need to use system resources**
  - **Validating resource reservation requests**
    - » **sponsors**
  - **All other functions**
    - » **Resource Planner**

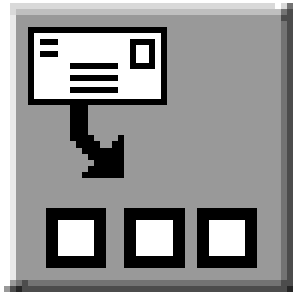
Launching Resource Planning Applications (Cont.)

- **Use UNIX command line to gain access to graphical user interfaces (GUIs)**
- **Eventually icons on the ECS desktop will allow access to resource planning applications**

Resource Planning Icons



Resource Planning Icon



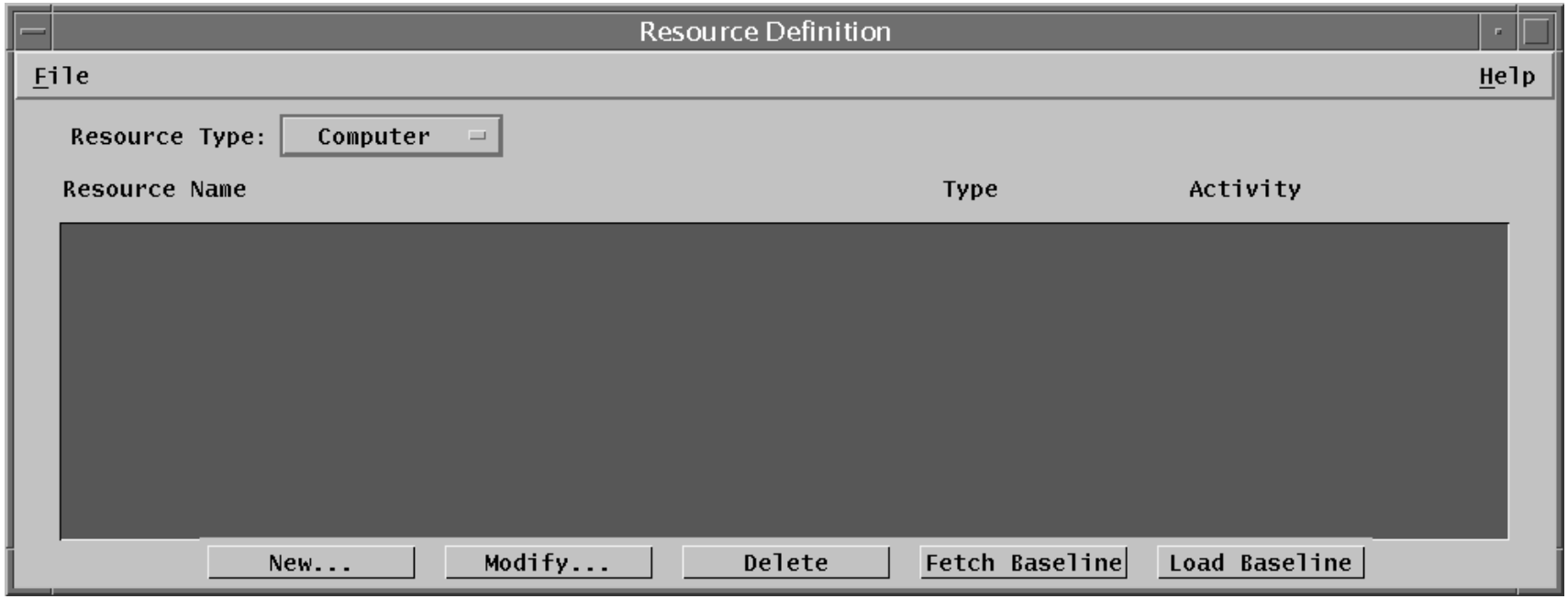
Resource Definition Icon

Launching Resource Planning Applications (Cont.)

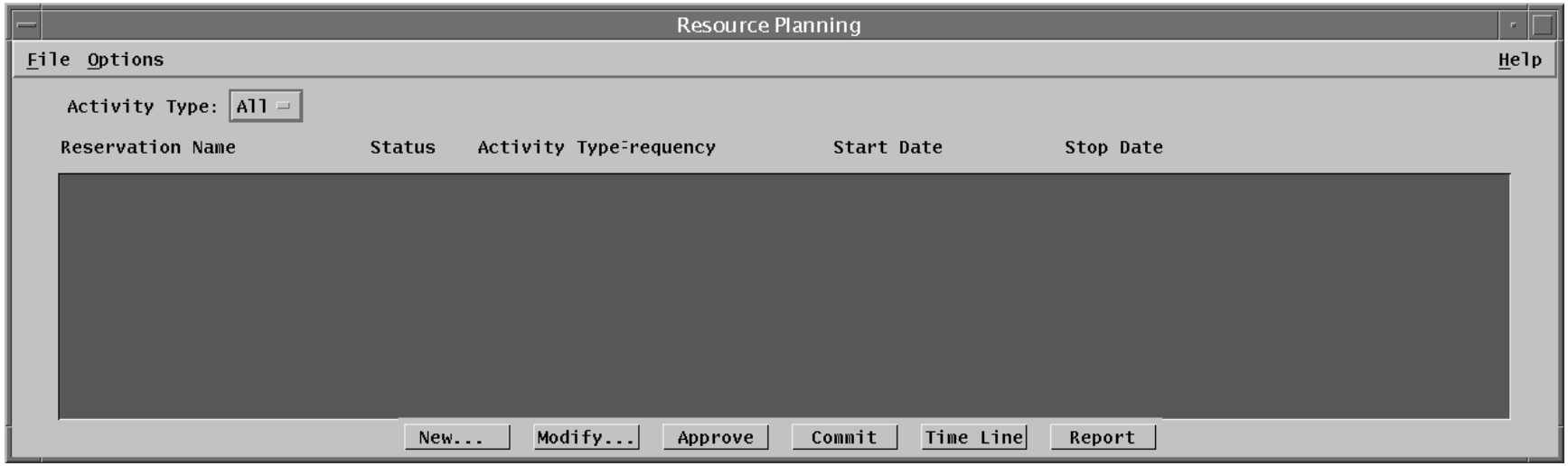
- **Procedure**
  - **Access UNIX command shell**
  - **Log in to the planning server**
  - **Source set-up file**
  - **Type command to start Message Handler, System Name Server and Resource Model**
  - **Type command to start Resource Definition tool**
  - **Type command to start Resource Planning tool**

Message Handler GUI

Resource Definition GUI



Resource Planning GUI



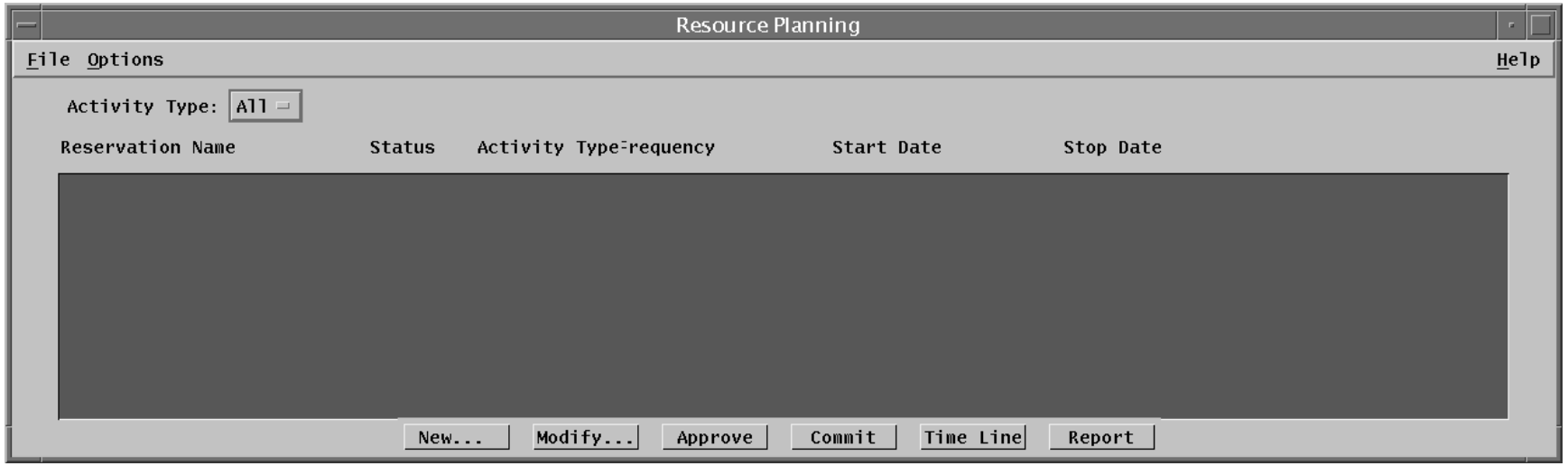
Creating a Resource Reservation Request

- **Resource Reservation Request describes…**
  - **activity for which the request is being made**
  - **resources to be dedicated to the activity**
  - **when/how often the activity will occur**

Creating a Resource Reservation Request (Cont.)

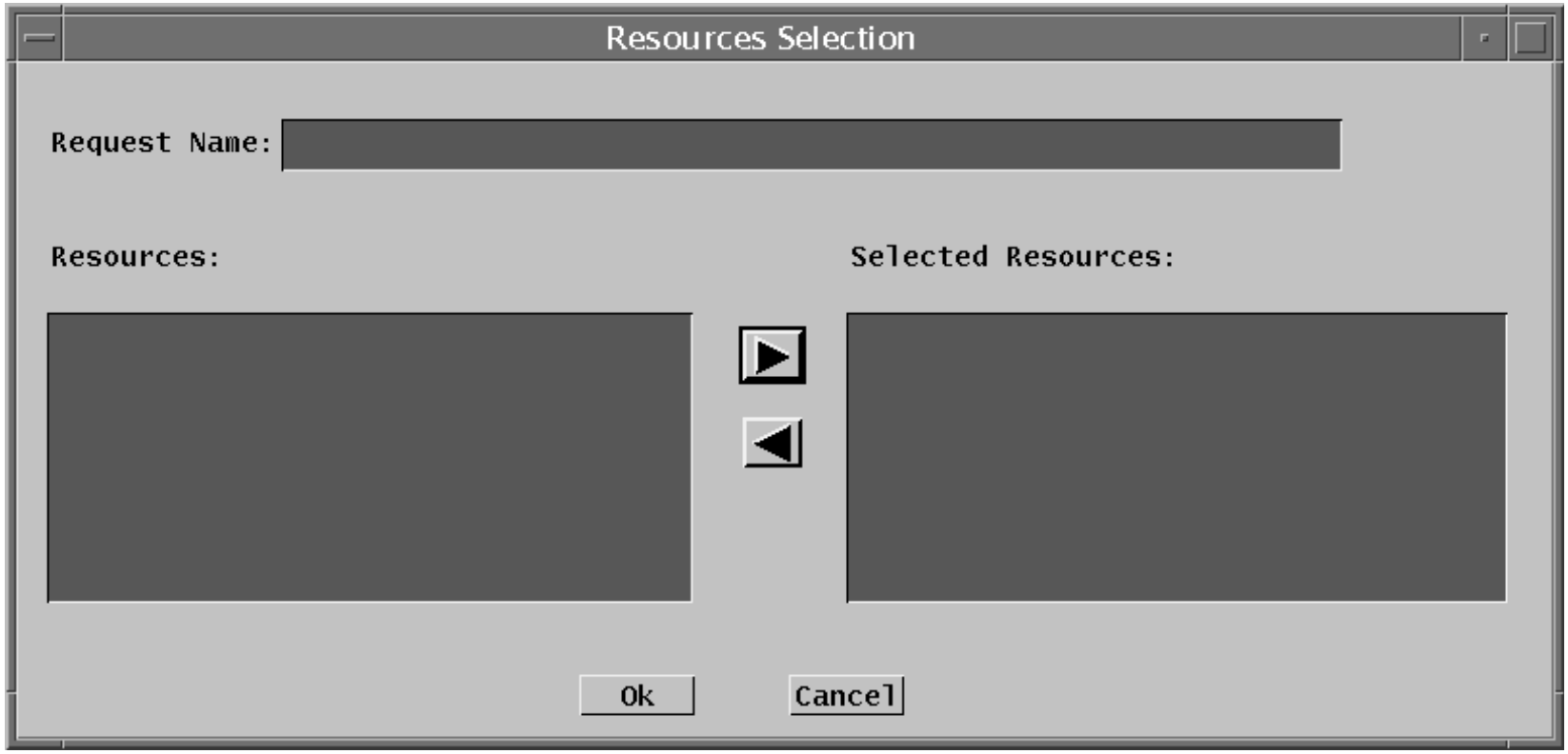
- **Procedure**
  - **launch the Resource Planning tool**
  - **gain access the Resource Reservation Request Edit/Definition GUI**
  - **specify activity for which the request is being prepared (include a description)**
  - **set the priority of the requested activity**
  - **select resources (separate procedure section)**
  - **enter duration information**
  - **select frequency (separate procedure section)**
  - **deselect intervals (if applicable)**
  - **enter relevant comments**
  - **save the request**

Resource Planning GUI

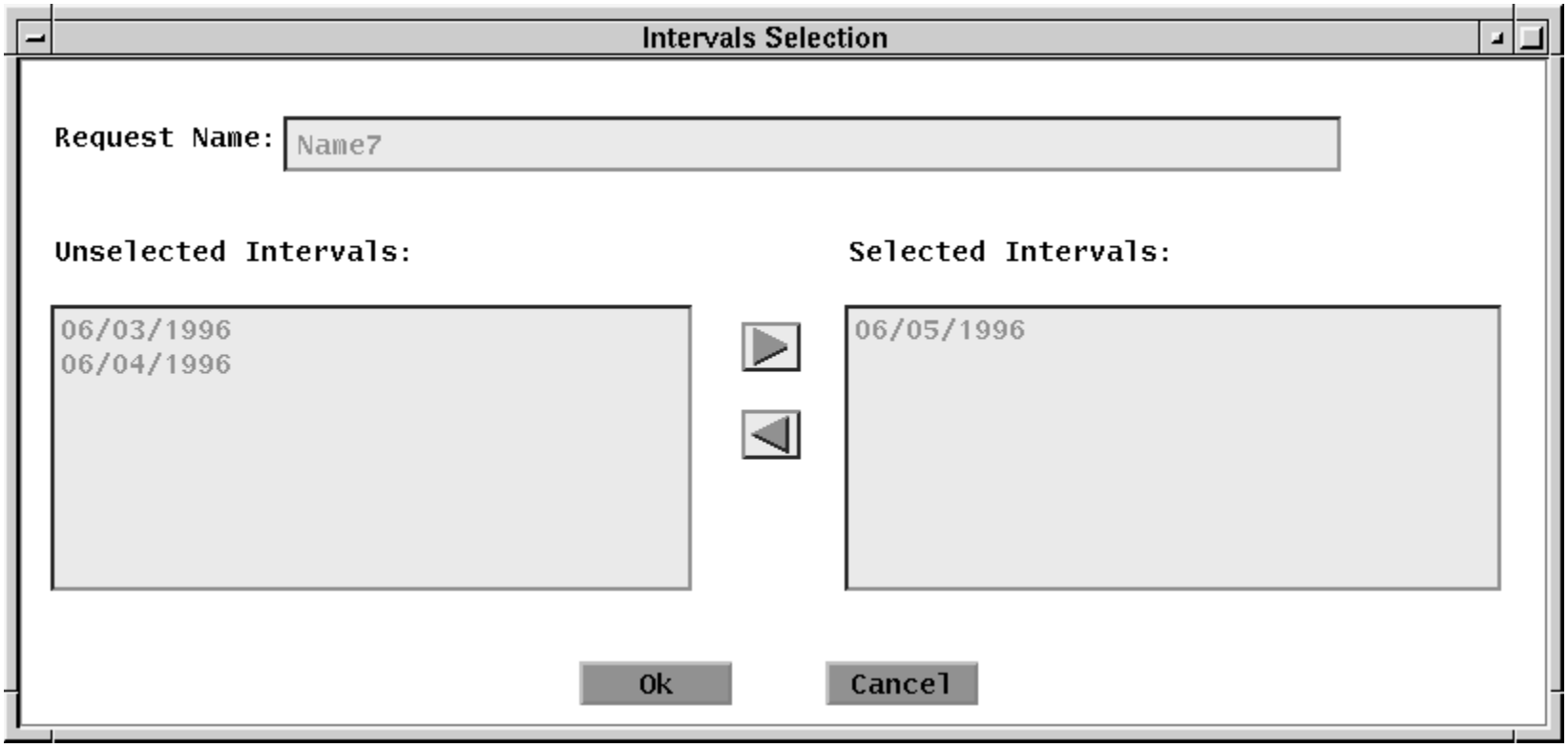


Resource Reservation Request Edit GUI

Resources Selection GUI



Intervals Selection GUI



Editing a Resource Reservation Request

- **Editing may be needed in response to changes in situation**
  - **characteristics of the activity/event**
  - **resources available**
  - **appropriateness of specified resources**
  - **resource conflicts**

Editing a Resource Reservation Request (Cont.)

- **Procedure**
  - **launch the Resource Planning GUI**
  - **select the resource reservation request to be modified**
  - **gain access the Resource Reservation Request Edit/Definition GUI**
  - **make modifications in the same manner as entries were made when Creating a Resource Reservation Request**

Editing a Resource Reservation Request (Cont.)

- All resource reservation requests must be validated and approved before scheduling
- Validation
  - Is the request complete and reasonable?
  - evaluation may be made by a “sponsor”
  - “Validated” and “Rejected” buttons on the Resource Reservation Request Edit/Definition GUI

Editing a Resource Reservation Request (Cont.)

- **Approval**
  - **valid request**
  - **review board agrees**
  - **Resource Planner submits request to PDPS for approval ("Approve" button on the Resource Planning GUI)**
  - **If the system detects conflicts…**
    - » **a dialog box pops up listing the conflicts to be addressed for resolution**
    - » **the Resource Planner resolves the conflicts, making modifications to resource reservation requests as necessary**
  - **system approves a resource reservation request only if there are no scheduling conflicts**

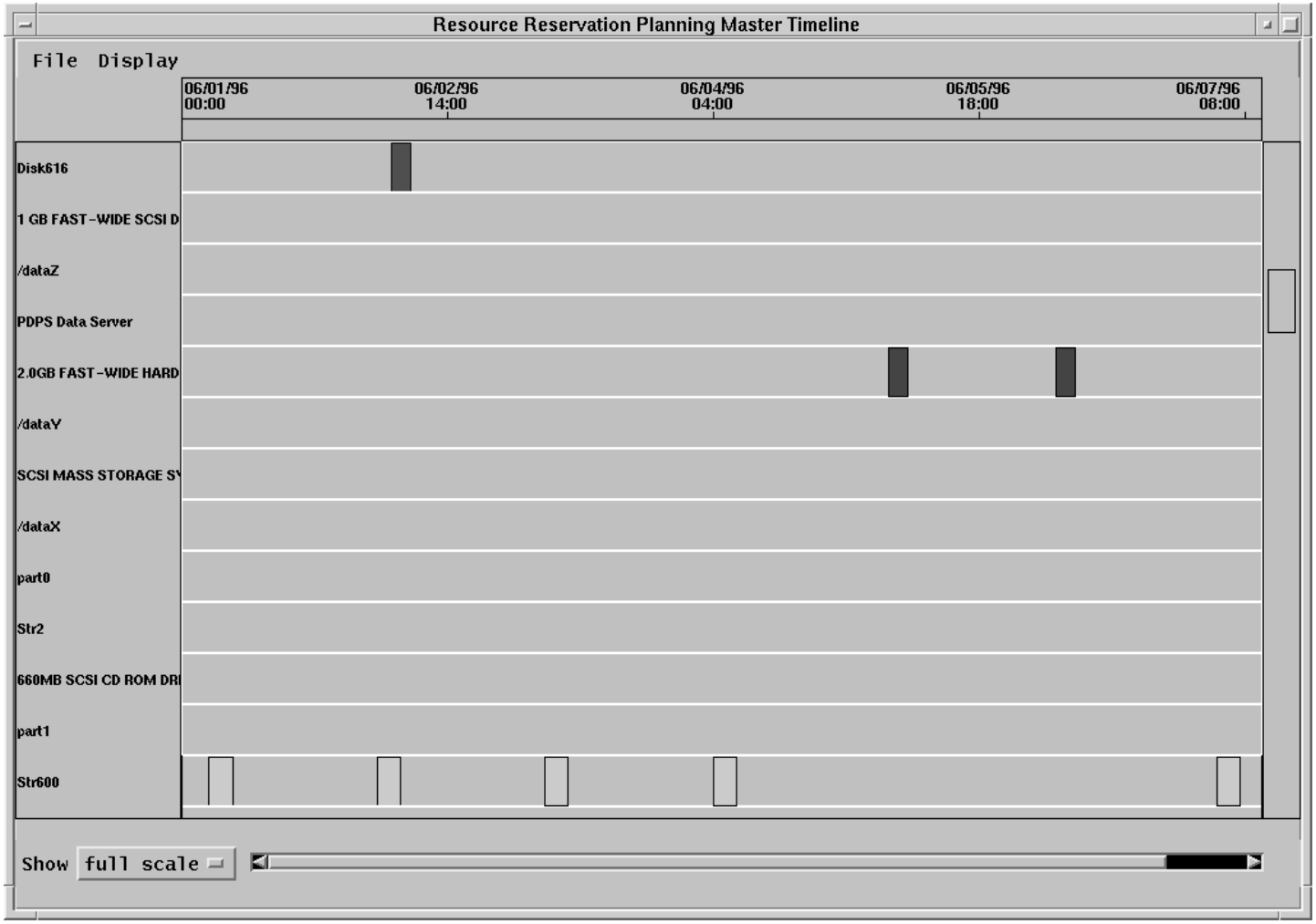
Editing a Resource Reservation Request (Cont.)

- **Committing a Resource Reservation Request**
  - **validated**
  - **approved**
  - **no conflicts**
  - **“Commit” button on the Resource Planning GUI**
- **Deleting a Resource Reservation Request**
  - **“Delete” button on the Resource Planning GUI**
  - **status is changed to “deleted”**

Reviewing Timelines & Generating Reports

- **Reviewing a Resource Timeline**
  - **"Timeline" button on the Resource Planning GUI**
    - » **set of resources, arranged along the left side of the screen**
    - » **period of time is indicated across the top edge of the screen**
    - » **use of a resource over a period of time is represented by "resource reservation" bars across the screen**
    - » **bar represents a time period during which a reservation has been made for the resource**
    - » **when there is no reservation affecting a particular resource, it is available for its default activity**

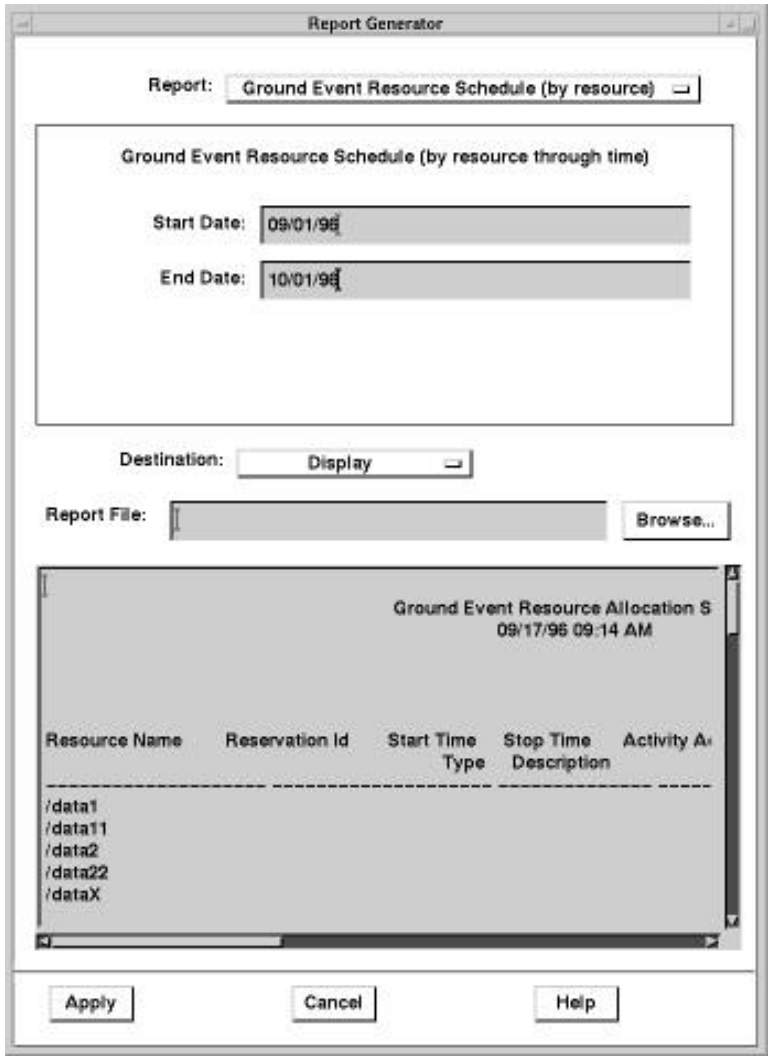
Reviewing Timelines & Generating Reports (Cont.): Timeline GUI



Reviewing Timelines & Generating Reports (Cont.)

- **Generating Resource Planning Reports**
  - **"Report" button on the Resource Planning GUI**
  - **both Production Planning and Resource Planning reports are available**
  - **Resource Planning reports**
    - » **Ground Event Resource Usage Report - percentage use of resources for different activity types**
    - » **Ground Event Resource Schedule (by Resource) - scheduled allocations of resources — ordered by resource**
    - » **Ground Event Resource Schedule (Chronological) - scheduled allocations of resources — ordered chronologically**

Reviewing Timelines & Generating Reports (Cont.): Reports GUI



Reviewing Timelines & Generating Reports (Cont.): Procedure

- **Generating Resource Planning Reports**
  - **Select the desired report**
  - **Enter report parameters (if applicable)**
  - **Select the report destination**
  - **Click on the Apply button to generate the report**

Defining Resources

- **Resource planning list of resources**
  - **initial list is obtained from the Baseline Manager database**
  - **changes to the resource planning list do not affect the Baseline Manager database**
    - » **facilitates planning for future activities that require resources which are not currently available**

Defining Resources (Cont.)

- **Resource Definition tool**
  - **allows the authorized user to...**
    - » **synchronize the resource planning list with the baseline**
    - » **add or delete future resources not contained in the baseline**
    - » **modify the characteristics of resources**
  - **makes modifications to the resource planning list in the PDPS database**

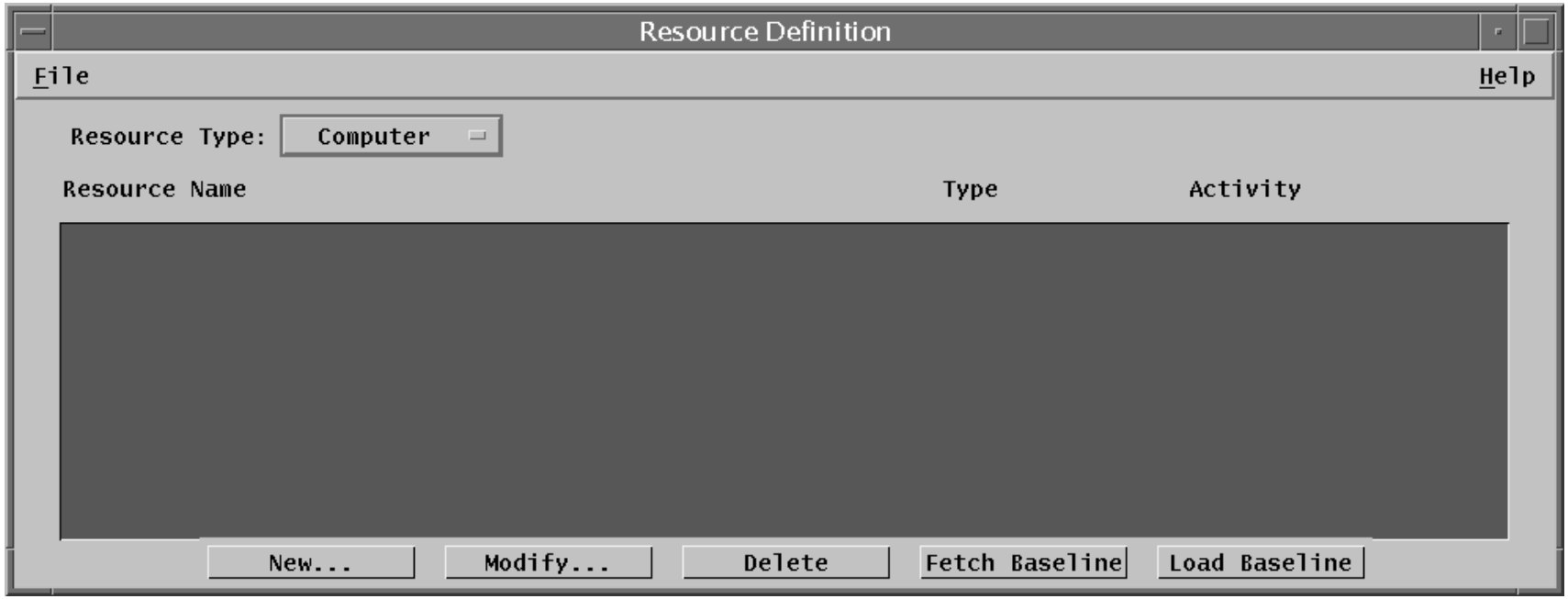
Defining Resources (Cont.)

- **Adding a Resource (Procedure)**
  - **launch the Resource Definition tool**
  - **select the appropriate Resource Type**
    - **» AutoSys**
    - **» computer (virtual computer)**
    - **» real computer**
    - **» disk**
    - **» hardware (generic hardware)**
    - **» string**
  - **click on the New… button**

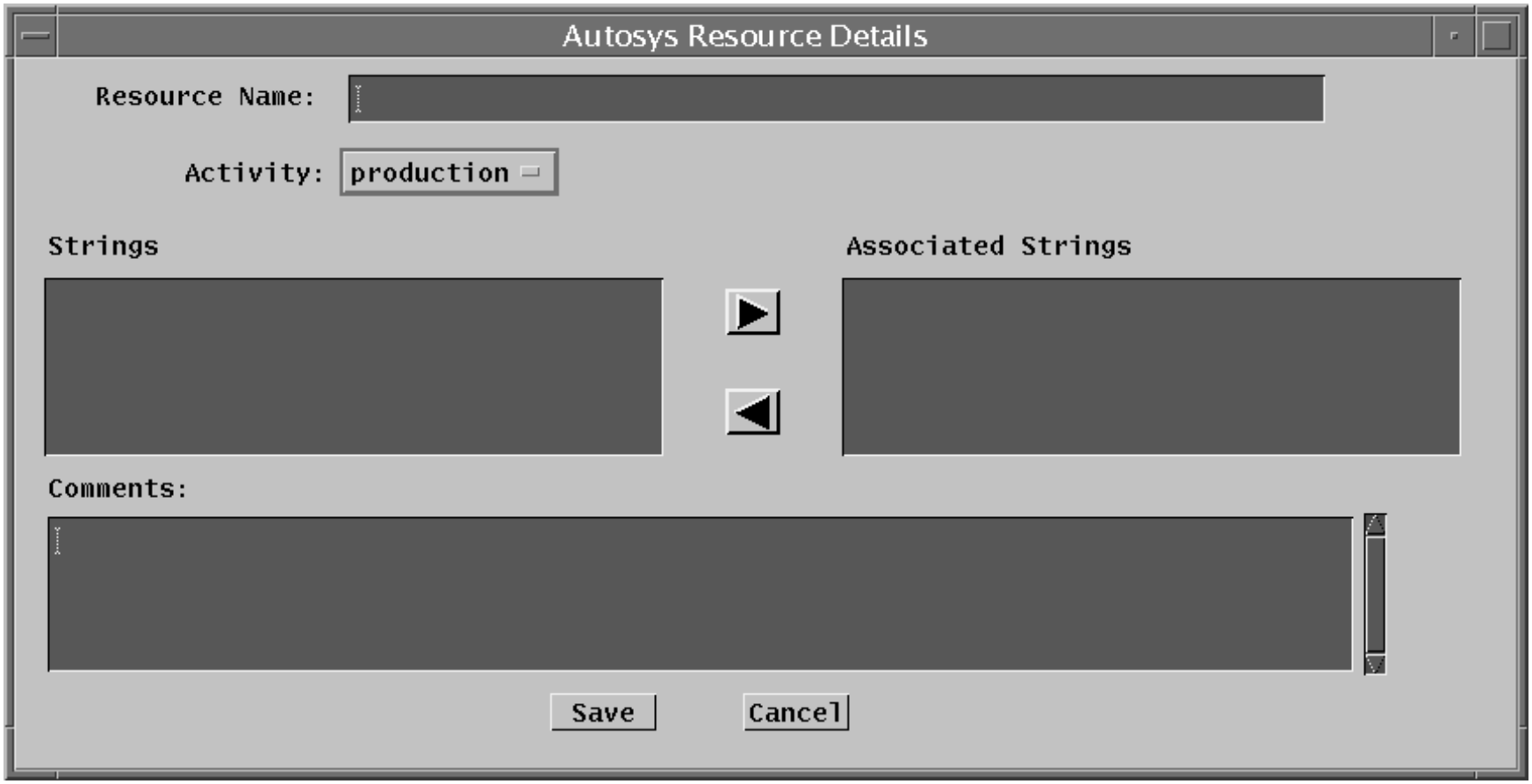
Defining Resources (Cont.)

- **Adding a Resource (Procedure) (Cont.)**
  - **perform the subordinate procedure corresponding to the selected Resource Type**
    - » **selection of Resource Type determines which GUI appears when the New… button is activated**
  - **save the resource definition**

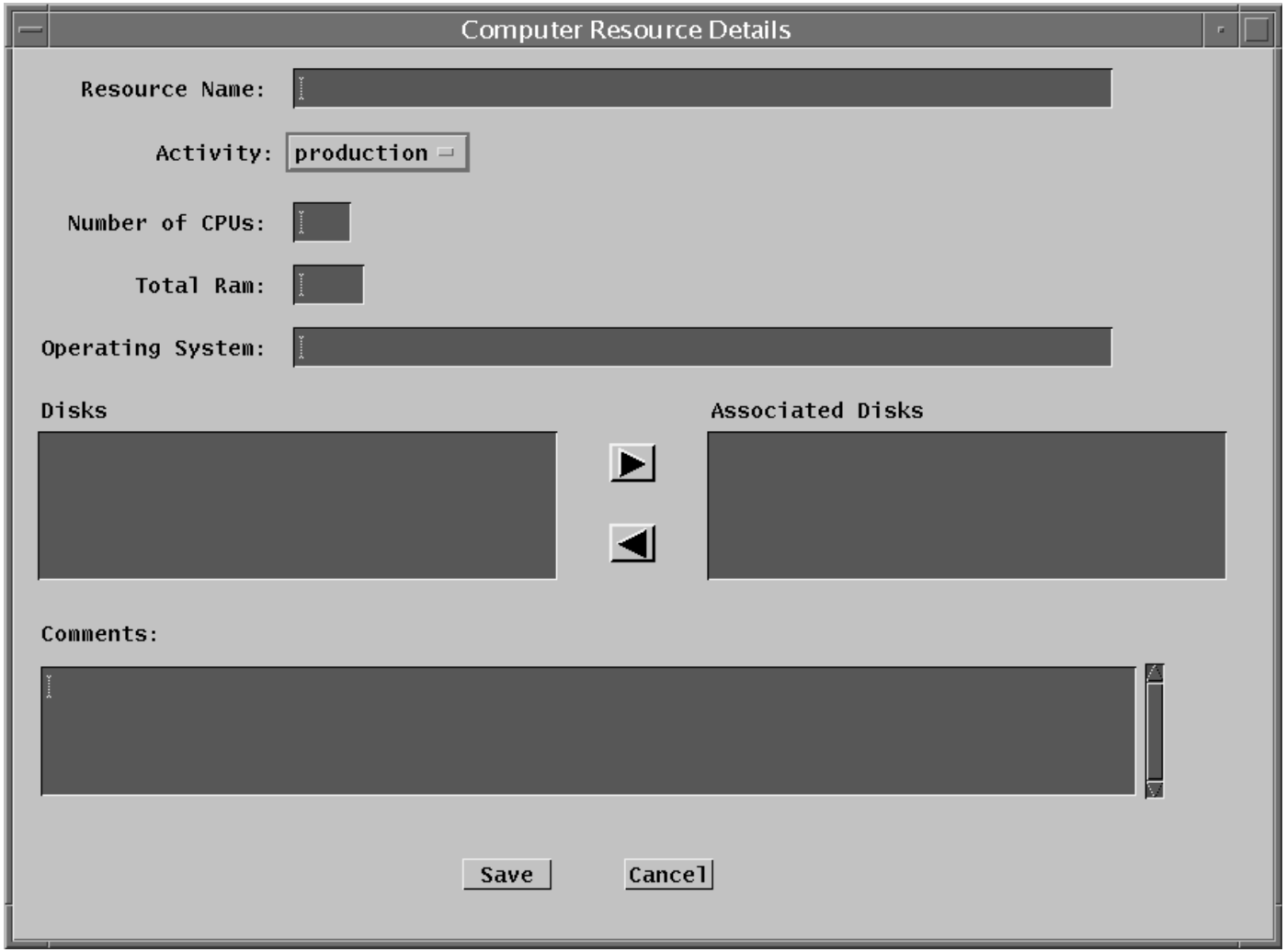
Resource Definition GUI



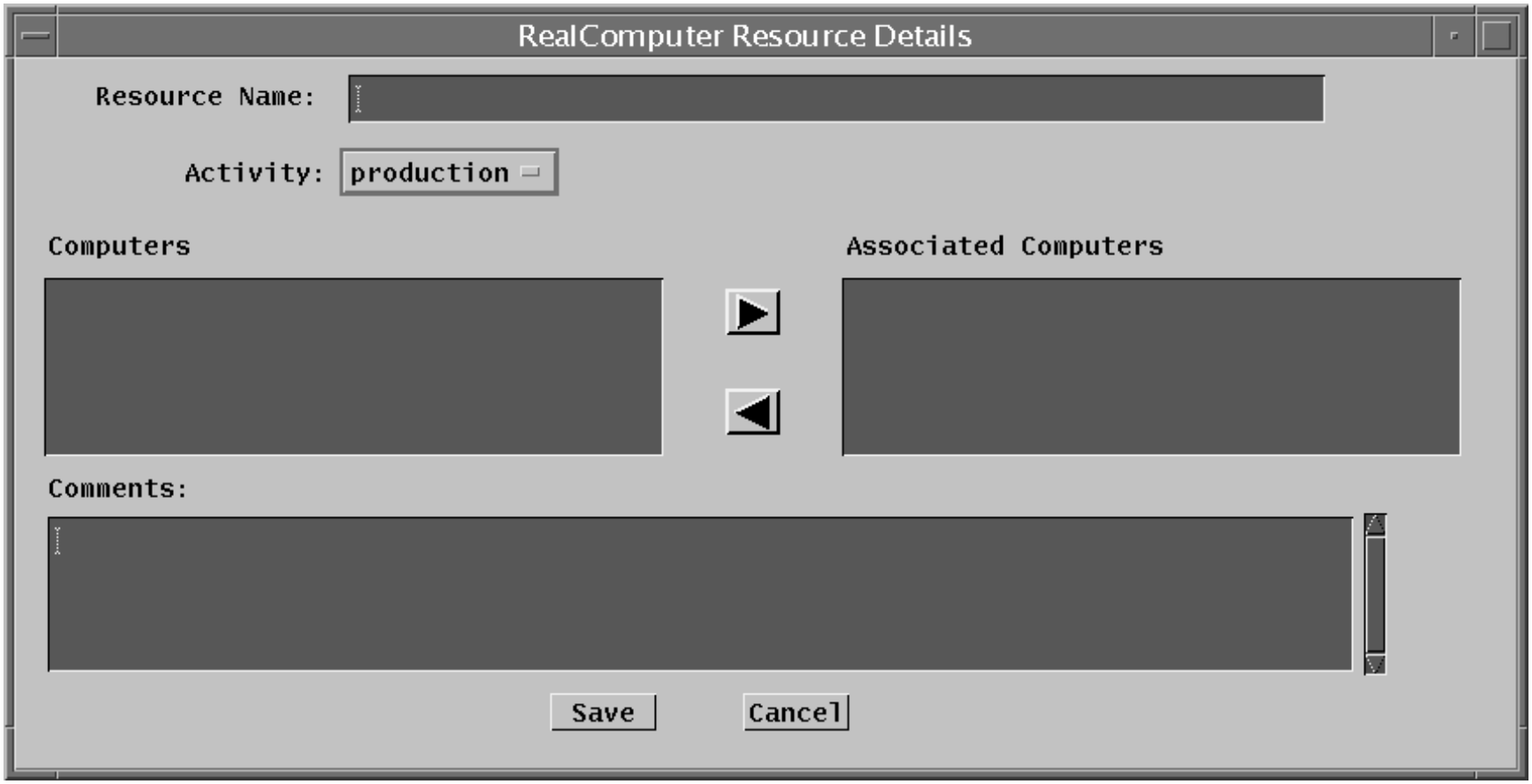
Autosys Resource Details GUI



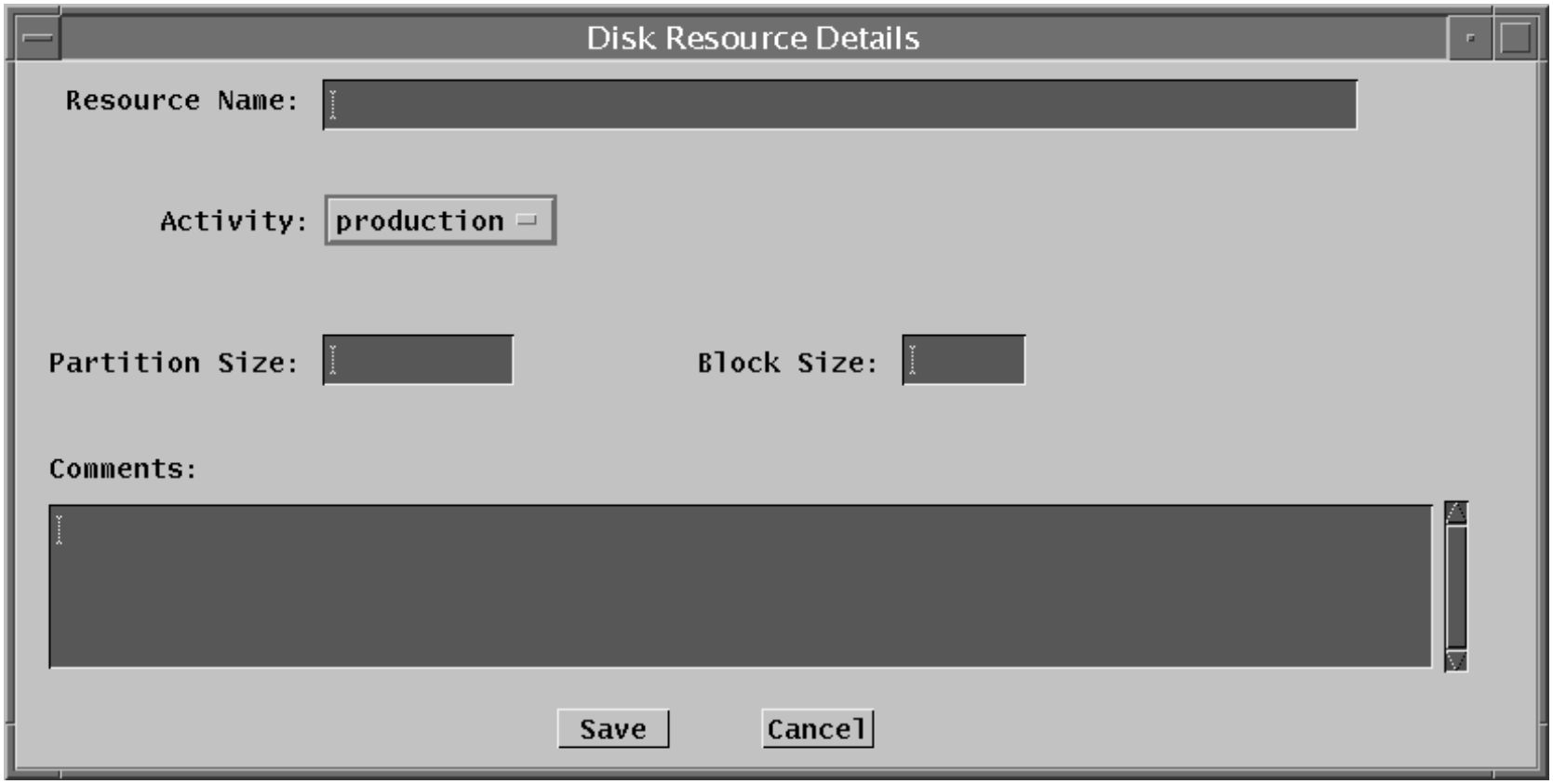
Virtual Computer Resource Details GUI



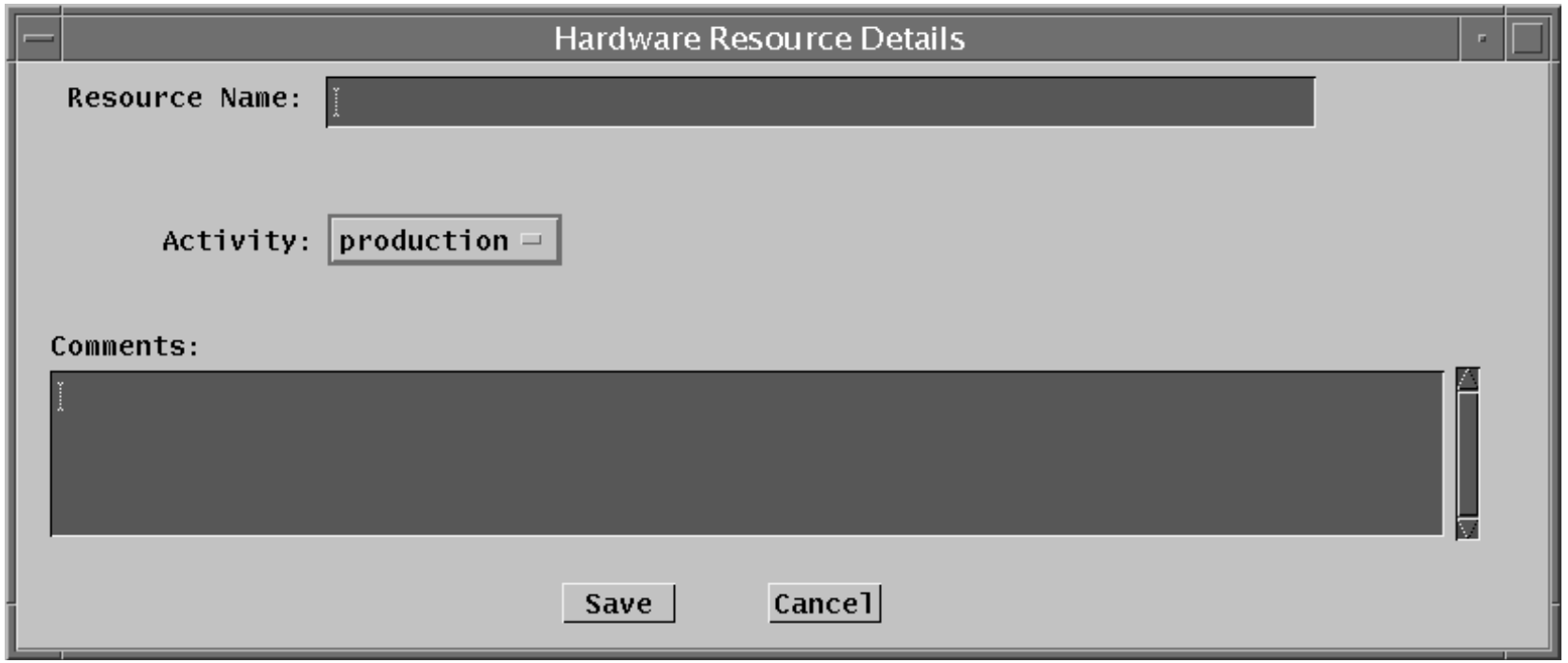
Real Computer Resource Details GUI



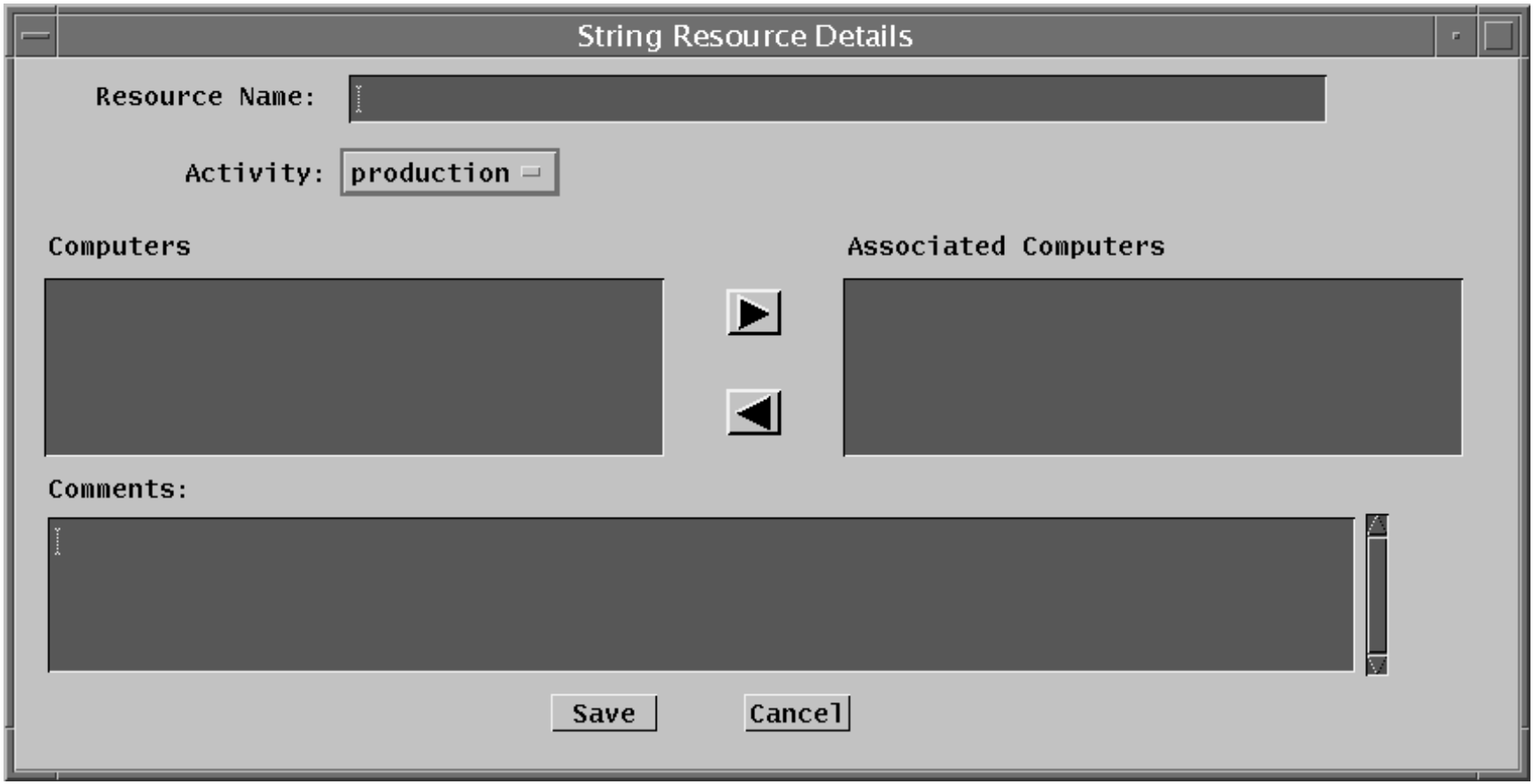
Disk Resource Details GUI



Hardware Resource Details GUI



String Resource Details GUI



Defining Resources (Cont.)

- **Modifying a Resource (Procedure)**
  - **launch the Resource Definition GUI**
  - **select the Resource Type**
  - **select the resource to be modified from the list on the Resource Definition GUI**
  - **click on the Modify… button**
  - **perform the subordinate procedure corresponding to the selected Resource Type**
    - » **selection of Resource Type determines which GUI appears when the Modify… button is activated**
    - » **make modifications in the same manner as entries were made when Adding a Resource**
  - **save the modified resource definition**

Defining Resources (Cont.): Procedure

- **Deleting a Resource (Procedure)**
  - **launch the Resource Definition GUI**
  - **select the Resource Type**
  - **select the resource to be deleted from the list on the Resource Definition GUI**
  - **click on the “Delete” button**

Defining Resources (Cont.)

- **Synchronizing Resource Listings**
  - **reloads the Resource Definition list from the Baseline Manager database**
  - **makes the list consistent with the database**
  - **two-step process**
    - » **Fetch Baseline — runs a Tivoli job that generates a file of configuration information used by Resource Planning**
    - » **Load Baseline — extracts the needed information from the Tivoli-generated file and loads it into the PDPS database**